

AN ANALYSIS OF FACTORS ASSOCIATED WITH THE EFFECTIVENESS
OF COUNTY EXTENSION AGENTS IN THE STATE OF KANSAS

by

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CHAPTER I

INTRODUCTION

Purpose

The purpose of this study was to identify and explain some of the background characteristics, college education, and other factors which were associated with the effectiveness of county Extension agents in Kansas.

It is hoped that the results of this study will provide some guidelines for the staffing process; job analysis, recruitment, selection, and placement; in-service training; and curriculum for the personnel being considered for a position in the Cooperative Extension Service.

Background

Cooperative Extension work in the United States is a nationwide tax supported out-of-school system of voluntary education for adults and youth. It provides services and education designed to meet the needs of people through a partnership between the Federal Government, the Land-Grant colleges, and the local sponsoring units, usually county governments. The Smith-Lever Act of 1914, amended in 1953 and 1955, provided this cooperative arrangement for county extension work on a national basis. Its fundamental objective is developing people through helping them learn to identify and solve their various problems, but the course of action to be taken is left to the people, individual or group, who make the decision in light of their own interest.

Seaman A. Knapp, a well-known Extension worker of the late nineteenth century, said that the fundamental objectives of Extension should be "to develop resources, increase the harvest, improve the landscape, brighten the homes and flood the people with knowledge of helpful things to readjust agriculture, to reconstruct the country home, and to put rural life upon a higher plane."¹ In this era of nuclear and space age, though the problems of agriculture and of rural people change with increasing rapidity, the fundamental objectives of the Extension Organization remain practically the same.² The only difference is that the present day objectives are broader. Several decades ago objectives were directed toward the farm people only, but now they are directed to anybody who is engaged in agriculture. The burden of achieving these ever-widening objectives rests on the county Extension agents. "The county Extension workers are by far the largest and the most important group in the Cooperative Extension Service."³ Their main functions, as listed by Kelsey and Hearne, are:

1. As teachers they help rural people to discover and understand their problems and acquaint them with possible solutions and encourage their adoption.

¹R. K. Bliss (ed.), The Spirit and Philosophy of Extension Work, (Washington: Epsilon Sigma Phi Fraternity and the Graduate School, U.S.D.A., 1952), p. 191.

²Lincoln D. Kelsey and Cannon C. Hearne, Cooperative Extension Work, (Third edition, Ithaca, New York: Comstock Publishing Associates, 1953), p. 27.

³Ibid., p. 75.

2. As organizers they help farm people to understand how group action may improve their situation.

3. As leaders they are alert to situations affecting the welfare of farm people and help them to find solutions to problems arising from these situations.¹

In addition, county Extension agents are responsible for the administration of their county Extension office and staff.² In Kansas, the Director of Extension designates the county agricultural agent as director of the county Extension service. This is a duty assignment, not an administrative title.³

Looking at the objectives of Extension and at the functions of the county agents, broad qualifications are required. These agents have to be carefully selected for the job, so that they can cope with the increasing demands of the people. Selection of qualified personnel by administrators is of vital importance because staff determines effectiveness of an organization.

Need of the Study

In recent years "selection tests" predicting job performance of prospective county Extension agents have been developed with a certain degree of accuracy. Such a selection test, a battery of questions, was developed by Ivan Nye. He found that 63 per cent of variations associated

¹Ibid., p. 49

²Ibid., p. 50.

³Handbook for County Agricultural Extension Councils, (Manhattan, Kansas: Kansas State University of Agric. & Applied Sciences, 1963), p. 24.

with the success of Extension agents could be explained: attitude contributed nine per cent, vocational interest 11 per cent, background and training 15 per cent, and personality 28 per cent. Nye pointed out that his findings must be considered tentative, until, as he stated "further research in addition to cross-validating present findings, might seek to explain some of the presently unexplained variations."¹

The Federal Extension Service recognizing the importance of Nye's findings, initiated additional research. As stated, "Some factors have been uncovered which more or less differentiate between the better and poorer county agricultural agents"² Since 1956 quite a substantial amount of research has been conducted in different states. Various characteristics of successful agents have been outlined. These characteristics sometime vary from one state to the other, and sometime they even contradict one another.

Frutchey referring to one of the studies conducted in Michigan reported that there was no statistically significant difference between the more effective and the less effective agents, in age, tenure in Extension, and college grade-point-average for all courses. While

¹Ivan Nye, The Relationship of Certain Factors to County Agent Success, Agricultural Experiment Station, College of Agriculture, Research Bulletin 498, (Columbia, Missouri: University of Missouri, May 1952), p. 37.

²Fred P. Frutchey, "Differential Characteristics of the More Effective and Less Effective Teachers," A Summary Report of Nine Studies, Made for the Office of Naval Research Department of Navy, U.S.D.A., Federal Extension Service, Washington D.C., 1953, p. 3.

in another study conducted in Wisconsin, Austman and Duncan list similar background characteristics that do have relationship to high performance, such as: scholastic achievement in college, experience in some vocations of professions, particularly in teaching, and age of agents within some limits.¹ However, these contradicting findings may not be faulty, or unreliable. The differences may be due to different situations. Information to date is far from complete. There are many variables which may contribute to the effectiveness of agents on-the-job. These factors deserve a thorough study before any useful conclusions can be drawn. Johnson and McCormick pointed out that "The field of selection tests offers an interesting and much needed field of additional research to identify the potential tests that might be applicable to Cooperative Extension Service."²

Statement of the Problem

One must consider the tremendous cost involved in selecting an employee who is not satisfactory, disregarding his effectiveness, after

¹Helgi H. Austman and James A. Duncan, "Job Performance of Beginning New Cooperative Extension Agents in Wisconsin," A Report of Research in Cooperative Extension, Department of Agriculture and Extension Education, University of Wisconsin, October, 1961, p. 15.

²Alton C. Johnson and Robert W. McCormick, Staffing Decisions in the Cooperative Extension Service, National Agricultural Center for Advanced Study and the Division of Management Operations, Federal Extension Service, Cooperating, Publication No. 14 (Madison 6, Wisconsin: University of Wisconsin, July 1962), p. 67.

spending some years in training it may even be necessary to counsel him out of the service.¹ This is wasted expenditure which can be eliminated by better selection procedures. Whenever the need for selecting an employee for a particular job arises due to a vacancy, a promotion or for any other reason, a good administrator always asks himself, "What kind of man do I need to run this organization more effectively?" In selecting county Extension agents, one question constantly asked is, "What are the factors which are characteristic of the more effective agents?" In making this study some of the major questions that needed to be answered were as follows:

Is the effectiveness of county Extension agents in Kansas associated with:

1. Tenure on the job?
2. Age?
3. Major field of study at college?
4. Previous job experiences?
5. College undergraduate grade-point average?
6. Subject matter credit hours earned at college?

This study attempts to provide answers to the above questions.

Scope and Procedure

The Federal Extension Service initiated further research in the area of selection tests (see appendix A). The objectives of the study

¹Ibid., p. 27.

were to validate the predictive value of the Missouri County Agents Inventory test in selecting new county agents. As a result Dr. Wilber E. Ringler, Assistant Director of Cooperative Extension Service in Kansas, conducted a study in cooperation with Dr. Fred P. Frutchey, Extension Research Specialist in Teaching Methods, Division of Extension Research and Training, U.S.D.A., Federal Extension Service. The study group included fifty-two county Extension agents who had served at least one year between July 1, 1958 and June 30, 1963, and who had completed the Missouri County Agents Inventory Test (appendix B) at the time of entering the Kansas Extension Service.

Answers were scored and the agents listed in a descending order the one with the highest score on top, and the one with the lowest score on the bottom. The group was then divided into three more-or-less equal parts--top third, medium third and bottom third. The agents were also rated and divided again into three groups--seventeen in the top third, seventeen in the mid-third and eighteen in the bottom third, by a panel of Extension administrators and supervisors. All people involved in the rating of agents were members of the Cooperative Extension Service, Kansas State University. The criteria for rating job performance included: (1) understanding of job--self-improvement; (2) developing, carrying out and reporting county programs; (3) office management; (4) leadership development; (5) personal appearance; (6) professional competence; and (7) communications ability.

The agents' scores and ratings were correlated and compared. In short, the conclusions were that the Missouri County Agents Inventory Test

did not have any predictive value of success. Hence Frutchey made an item analysis of the 461 questions in the Missouri County Agents Inventory. He found that only 117 questions differentiated between the more and the less effective agents (appendix C). Then he rescored the inventories for the fifty-two agents, using a new key on the 117 questions, and compared the new scores with the performance evaluation (ratings) of the agents. The correlation was $r = .87$. The 3 x 3 contingency table in the appendix D shows this relationship. Thus Ringler, after adding some more questions, developed a new County Agents Inventory for Kansas to be used for future study with county Extension agents (appendix E).

The researcher in his study used part of the rated and the rescored agents of the above study as a criterion, and based his study on it. When Frutchey correlated the rated and the rescored two group of agents, some from the top and bottom third agents of each fell into the mid-third group on the correlation contingency table. Those agents who did not achieve a perfect correlation between their ratings and scores were omitted from this study. In other words the universe of this study is only the top and bottom third agents of the 3 x 3 contingency table who had a perfect correlation between their scores and ratings. There were fifteen agents in each group. Data related to the background, education and other factors concerning these agents were collected from records in the State Extension Office. The methods used in the analysis of data were: Group comparisons by arithmetic mean, statistical median and range; and Yule's "Q" to determine the degree and the direction of associations between attributes under study. A more detailed explanation

of methods used in the analysis of data is given in Chapter III.

Statement of the Objectives

The objective for this study was to determine if there were important associations between the county agents' effectiveness on the job and:

1. Tenure in Extension.
2. Age.
3. Academic major field of study at college.
4. Previous job experiences in:
 - a. Teaching Vocational Agriculture, Extension Service and Sales work.
 - b. The U. S. Army and National Guard.
 - c. Total months of all previous job experiences.
5. College undergraduate grade-point-average.
6. The subject matter credit hours earned at college in:
 - a. Education courses.
 - b. Extension Education courses.
 - c. Psychology courses.
 - d. Sociology courses.
 - e. Speech and Journalism courses.
 - f. Humanity courses.

Definitions of Terms Used

Definitions of certain terms used in this study are as follows:

Background factors: Webster defines background as "the scenery or ground behind something seen or represented." He writes further that, "background is the sum of one's experience, training and education." Factor is defined as, "one of the elements that contribute to produce a result; a constituent." In this study background factors are those constituents or characteristics of experience and academic education, obtained by the county Extension agents prior to or during employment in the Kansas Extension Service.

County Extension agents: In this study it only refers to county agricultural agents, 4-H club or youth agents and to assistant agricultural agents.

Job performance: In this study it is defined to mean the execution or exhibition of the skills required of the county Extension agents.

The more effective agents: In this study those agents who were rated highest, by their administrators, and also scored highest on the 117 items of the Missouri County Agents Inventory Test are referred to as the more effective or the more successful or the top one-third agents interchangeably.

The less effective agents: They are those agents who were rated and also scored the lowest points. Oftentimes they are referred to as bottom one-third agents or the less successful agents.

It should be noted that both the more and the less effective group of agents were performing satisfactorily in the Extension Service. Frutchev referring to the general learning ability of such selected agents wrote that,

Since they are a selected group, the range of ability ... is much less than that of general population, and the correction between general learning ability and effectiveness would necessarily be lower. Eighty per cent of the Missouri county Extension agents, for example, scored in the upper fifth on the Army General Classification test ...¹

Manpower management: It is defined by Yoder to describe the whole in-employment, development, and utilization of human resources.

"It includes both group and individual relationship, both labour relations and personnel management."² It also includes staffing, recruitment, selection, and placement of job holders.

Personnel management: Yoder used it to describe activities dealing with the employees as individuals. It includes such activities as selection, rating, and counseling.³

¹Frutchev, op. cit., pp. 12-13.

²Dale Yoder, Personnel Management and Industrial Relations, (fourth edition; New Jersey: Prentice Hall, Inc., 1958), p. 15.

³Ibid.

CHAPTER II

REVIEW OF LITERATURE

Introduction

There were two major areas of interest in the review of literature. The first half of this chapter deals with the Staffing Process of Manpower Management. The second half discusses research findings that are directly pertinent to this study. Considerable space was devoted to the research findings and to the criteria of measuring effectiveness or the procedures used in determining the more and the less effective agents. Also some space was devoted to the findings of research that may contribute to a better understanding of the problems of the least effective agents.

Staffing Process

Knowledge and understanding of the staffing process is hampered by confusion in the use of words. This is because different authorities and writers have used different terms in the field of Manpower Management, to explain the staffing process. The terms "Procurement," "Staffing," and "Staffing Process" have been used by Flipppo,¹ Yoder,² and Johnson and McCormick³ as synonymous terms.

¹Edwin B. Flipppo, Principles of Personnel Management (New York: McGraw-Hill Co., 1961), p. 115.

²Dale Yoder, Personnel Management and Industrial Relations (fourth edition; New Jersey: Prentice Hall, Inc., 1956), p. 15.

³Johnson and McCormick, op. cit., p. 10.

Simply, staffing can be defined as, securing adequate manpower to run an effective organization, firm, or agency. It includes: job analysis, so as to provide guidelines to the type and quantity of employees needed; the discovery of sources to these types and develop methods of recruiting; selection; and placement of personnel.^{1,2}

Staffing is a continuous process in any organization whether large or small. The degree of complexity in staffing increases with an increase in the size of the organization. In Cooperative Extension Service this process is further complicated by the involvement of "lay" committees, or by the county government officials.³

There are four basic steps or areas involved in the staffing process. They are as follows:

1. Job analysis
2. Recruitment
3. Selection
4. Placement.⁴

These four basic areas also suggest that staffing is a comprehensive process.⁵ Job analysis is the process of determining pertinent information

¹Dale Yoder and others, Handbook of Personnel Management and Labor Relations (New York: McGraw-Hill Book Company, Inc., 1958), Sec. 5.3.

²Yoder, op. cit., pp. 14-15.

³Johnson and McCormick, op. cit., p. 11.

⁴Yoder, loc. cit.

⁵Johnson and McCormick, loc. cit.

relating to the nature of a specific job by observation or study. "It is the determination of the tasks which comprise the job and the skills, knowledge, abilities, and responsibilities required of the worker for successful performance....."¹ Recruitment is the process of locating and contacting prospective candidates as prescribed by job specifications, and stimulating them to apply for positions in the organization.² Selection is the screening process. And placement is the determination of the job to which an accepted candidate is to be assigned and his assignment to that job.³ None of these four areas can be ignored in an efficient organization. All steps are of equal importance. For instance, placement of personnel is incomplete without the selection process, so is selection without recruitment. Above all is job analysis. Some authorities do not include job analysis in the staffing process, because of its generality in use. Yoder clearly stated that it is the number one task in the staffing process, because it provided guidelines to the quality of manpower needed.⁴ Stone and Kendall wrote that out of this job analysis, job description and job specifications were developed which were an absolute necessity

¹Yoder and others, loc. cit., citing War Manpower Commission, "Training and References Manual for Job Analysis," Bureau of Manpower Utilization, Government Printing Office, Washington, June 1944, pp. 1-3.

²Flippo, op. cit., p. 159.

³Yoder, op. cit., p. 203.

⁴Yoder, loc. cit.

in the selection process.¹ Staffing process begins with job analysis and ends with the placement and introduction of the new employee to his job, to his position, to his fellow employees and to the organization.

Finally, staffing process should be audited or revised periodically, so as to ascertain if the policies and procedures set forth a few years back are still appropriate with the present conditions. And, if deemed necessary, staffing process should be adjusted to meet the challenge of the present conditions and that of the near future as well. This periodic revision is essential, especially in a dynamic organization such as the Cooperative Extension Service.

In the sections to follow the selection process is discussed in some detail. The four basic areas or steps of staffing were just mentioned, only to show the place of selection in the overall process.

Selection of Personnel

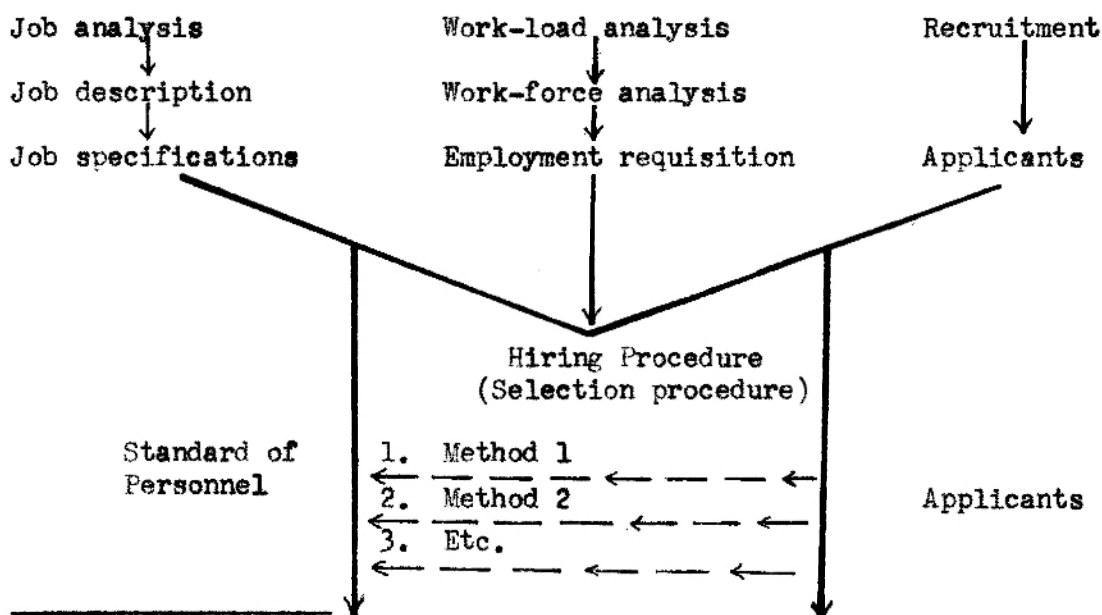
The most important asset of an organization is its personnel. Every organization, whether large or small, has some objectives to be achieved. What an organization does, how well, and when it does it depends largely on the quality of its constituents--the staff. Quality in an organization is controlled largely through proper selection, and

¹C. Harold Stone and William E. Kendall, Effective Personnel Selection Procedures (Englewood Cliffs, N. J.: Prentice Hall, Inc., 1958), p. 34.

²Johnson and McCormick, op. cit., pp. 75-76.

of course good pay. Yoder defined selection as "the process in which potential employees, recruited from various sources, are examined and separated into two classes--those to be offered employment and those who are not."¹

Selection is the next logical step which follows recruitment. It is designated to be the negative counterpart of recruitment, and serves the function of screening or separating the most likely and promising applicants for employment among those made available by recruitment.² Obviously, before the actual process of selection can be started, a considerable amount of preliminary work is necessary on the part of any individual organization. Flippo summarizes this preliminary work, which is an absolute necessity for effective selection, as follows:



¹Yoder, loc. cit.

²Yoder and others, op. cit., sec. 8.2.

There are three basic preliminary requirements before selection can take place:

1. There must be a vacancy or a new position that needs to be filled, which comes from employment requisitioning, as a result of work-force and work-load analysis, to authorize "selectors" to initiate selection.

2. There must be a written statement of the personnel standard, with which the "selectors" can compare prospective employees. This statement is derived from job specifications as developed through job analysis. This basic factor of selection is probably the most neglected. Literature strongly emphasized that job analysis is a must for a more objective and effective selection.

3. There must be adequate applicants for the job from whom the "selectors" can select. This is provided by an effective recruitment program. It is recommended that the recruitment program should be positive, as far as possible.¹

Selection Procedures

The selection, hiring, or employment procedure is essentially a series of steps arranged in such a manner to obtain pertinent information about the applicant, in line with the degree of importance of qualities the position demands. At each step more and more is learned about the prospect, and the information obtained is compared with the pre-set standard of personnel. If the prospect qualifies he moves along the

¹Flippo, op. cit., p. 177.

steps until hired, or he may be rejected from the process at any stage if found unsuitable or unfit.¹

There are several selection procedures that have come into general use. Actually most organizations have copied these procedures and adapted them according to their needs. Three examples of such models are as follows:

Uhrbrock has illustrated a planned sequence in the selection procedure. It is illustrated in Figure 1. It may be noted that the process actually begins with a preliminary interview and ends up with a physical examination. It also includes a waiting list of desirable applicants not included in other procedures.

Another example is given by Jurgensen. He lists six steps as follows:

1. Filling out an application blank.
2. Filling out a job preference form, in which the applicant ranks the ten factors that are of greatest importance to him in a job.
3. Interviews (structured to cover work history, schooling, family and domestic background, financial status, and personal history), and ratings.
4. Testing ability and aptitudes with test batteries adapted to various jobs.
5. Physical examination.
6. Interviews with supervisors and actual hiring.²

¹Flippo, op. cit., pp. 177-178.

²Clifford E. Jurgensen, A Scientific Selection Program (Conference Board Management Record, Vol. 9, No. 10, October, 1947). pp. 107-112.

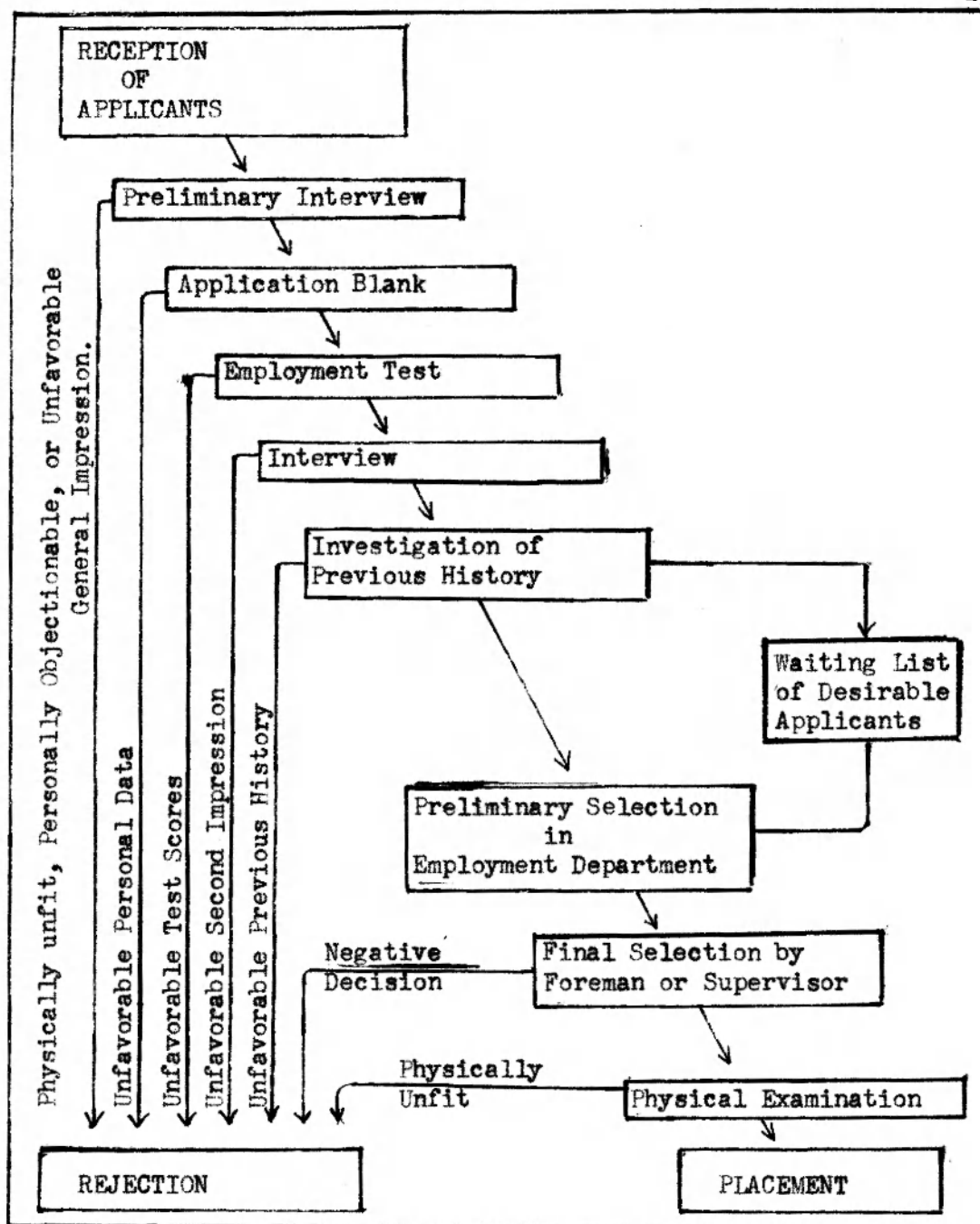


Fig. 1. Planned Sequence in Selection Procedure. (From R. S. Uhrbrock, "Mental Alertness Test as Aids in Selecting Employees," *Personnel*, Vol. 12, May 1936, p. 231), cited by Yoder, *op. cit.*, p. 211.

A third example is that given by Johnson and McCormick, implying its use in Cooperative Extension Service. They discuss selection procedures under seven headings as follows:

1. The initial contact.
2. The application form.
3. The college transcript and records.
4. Checking the applicant's background (references).
5. Selection interview.
6. Selection tests.
7. Physical examination.¹

The above three examples of selection procedures are only suggestions. The procedure will vary with the size of the organization, the type of job, and the philosophy of personnel management.² There is no standard procedure that can prescribe a sequence that would be appropriate for all types of employees. In general, there is a tendency that a longer and more complicated procedure is essential for more important positions, while a shorter procedure is adequate for less important non-supervisory positions. But Yoder stated that, "The sequence may be more extended, also, for those who are to hold sales or other jobs in which they represent the employer in dealing with public."³ Positions such as those held by county Extension agents are of this nature. Extension agents are

¹Johnson and McCormick, op. cit., pp. 56-68.

²Flippo, op. cit., p. 181.

³Yoder, op. cit., p. 213.

salesmen of ideas and at the same time they represent several joint employers. Obviously, such an important position deserves a carefully planned procedure while selecting county agents.

Criteria for Establishing and Evaluating Selection Procedures

Since it is not possible to prescribe a standard sequence of steps to be used by all employers and for every position, it is necessary that every organization should make an effort to establish its own, rather than copy conventional selection procedures. It is an absolute necessity that some criteria be kept in mind to evaluate such a procedure. Johnson and McCormick suggest the following questions to be answered:

1. Will this procedure provide valid data for making the decisions to hire?
2. Will this procedure provide reliable data?
3. Will this procedure be feasible to administer? Does it involve more details than an organization can handle?
4. Will this procedure be compatible with the applicants? Will he be willing and able to participate in this procedure without becoming discouraged or disgusted?
5. What about the cost of this procedure? Is it within financial means of the organization?
6. Does the procedure relate to other procedures used and if used, will it contribute information that is valid and useful?¹

The above criteria can also be used to evaluate a selection procedure which is already in use. Questions pertinent to the above can be

¹ Johnson and McCormick, op. cit., p. 55.

included in the selection test or given before the physical examination, if such a test is in use. This will provide data and facilitate evaluation of the procedure.

Other criteria, in addition to the above, which can be used in evaluating the selection procedure already in use are as follows:

1. Success and satisfaction of employees on the job.
2. Turnover figures may provide a clue.
3. Salary, earnings and productivity.
4. Tests of job satisfaction compared with employees selected by different methods.
5. Statistical techniques:
 - a. Output or earnings of employees compared between those with favorable references, and those with relatively poor references.
 - b. Scores on weighted application blanks may be correlated with employee ratings, job satisfaction, or moral scores.
 - c. Turnover rates during the first six months of employment compared for two groups of firms or organizations distinguished by their selection policies.¹

The remainder of this chapter deals with more specific factors, which affect selection of successful county agents in the Cooperative Extension organization. The duties and responsibilities, and qualifications required of county agents are discussed with special emphasis on those in the Kansas Extension Service. The sections to follow summarize research findings which are pertinent to the objectives of this study.

¹Yoder, op. cit., pp. 230-231.

Duties and Responsibilities of County Extension Agents in Kansas

Harold E. Jones, Director of the Kansas Extension Service, outlines the duties and responsibilities of county Extension agents as follows:

1. The duties of Extension agents are to give instruction in agriculture, home economics and 4-H club work to the people of the county, through practical demonstration and otherwise.

2.(a) County agricultural agents are directly responsible for the development of all Extension activities, in such counties which have no home economics and 4-H club agent.

(b) County Agricultural agents are directly responsible for the development of the agricultural program, and jointly responsible with the home economics agents for the 4-H club programs, in such counties which have home economics agents but no 4-H club agents.

(c) County agricultural agent is directly responsible for the agricultural program, and he will assume responsibility for the whole Extension program to be balanced and properly coordinated, in such counties which have both home economics and 4-H club agent.

3. County Extension agents are specifically responsible for work with members of the Agricultural Extension Council.

4. Administrative duties - office management and reports, finance and budget, program planning and execution, administrative communication with the state office, and in the case of the county agricultural agent, administrative leadership.¹

Academic Qualifications Required of County Extension Agents

The county Extension agent requires a large amount of technical information to cope with the functions, duties and responsibilities of the county Extension job. In Kansas Extension Service, minimum academic

¹"Organization Plan and Duties for Kansas Extension Service," Kansas N387-1 N387-25, revised January, 1960, Manhattan, Kansas: Cooperative Extension Service, Kansas State University, pp. 17-23.

requirement is a Bachelor's degree in agriculture from an accredited college.¹ Another unwritten requirement is to prefer candidates with highest gradepoint averages. Johnson and McCormick are stating that this requirement is due to the increasing demand of advanced degrees from Extension employees, coupled with the granting of leave for graduate study by the Extension Service.² There is no mention in the literature as to what major or minor, in the subject matter areas, is most desirable. Only general statements are made about the qualifications required for good Extension workers.

Qualifications of Good Extension Workers

Harold E. Jones, Director of Cooperative Extension Service, Kansas State University, Kansas, has emphasized the desirable qualifications for a good Extension worker, as defined by the National Task Force on in-service training, as follows:

1. An understanding of the social systems of Extension clientele.
2. An understanding of how people develop, both as individuals and as social groups.
3. A good sense of public relations. Confidence is the foundation of good public relations and successful teaching. Integrity, tact, and judgment are important qualifications of successful Extension workers.

¹ Handbook for County Agricultural Extension Council, Manhattan, Kansas: Kansas State University of Agriculture and Applied Sciences, 1961. p. 21.

² Johnson and McCormick, op. cit., pp. 59-60.

4. The ability to develop programs is a trait for which we are demanding increased proficiency. Determination of problems and interests, planning of work, management of time, ability to make decisions, and ability to evaluate results are important functions of program development.

5. Abilities in supervision and administration including knowledge of Extension organization and policy, of office management, and of personnel selection fall in this category....

6. Knowledge of education including knowledge of adult education programs, the principles of learning and the principles of teaching....

7. A knowledge of communications. Great proficiency in communications is required in the Extension teaching methods.

8. Ability to interpret research. Extension has excelled in transferring research facts into farm practices, particularly in the field of production....

9. A knowledge of technical subject matter....¹

Looking to the above list of desirable qualifications for Extension workers, some important questions come to mind: "How can one evaluate these qualities objectively, so as to choose good Extension workers?" "What does research say about these academic and non-academic qualifications?"

The sections to follow summarize and review the research findings related to the academic and other background factors, which are designed to identify such factors, characteristic to good or successful county agents.

¹ Harold E. Jones, "Extension As a Profession," Director of Extension, Kansas State University, Manhattan, Kansas: A paper prepared and presented to the class of Extension Organization and Policies, Fall, 1964. (1-691-2-200)

Studies on Academic and Other Differential Characteristics of the More
and the Less Effective County Extension Agents

Posz¹ studying academic background characteristics of county Extension agents in Michigan, used two criteria of performance: (1) ratings of supervisors; (2) satisfaction of county agents on the job. This study involved 81 county agricultural agents and 48 county 4-H club agents. Comparisons were made between the more effective and the less effective agents, as rated by supervisors. His findings were as follows:

There was no statistically significant difference between the more and the less effective agents in:

- a. Age. The younger agents were equally as effective as older agents.
- b. Tenure in Extension.
- c. College grade-point-average for all courses.
- d. College grade-point-average for technical courses only.
- e. Number of hours of technical agriculture courses in college.
- f. College majors or field of emphasis in college.

Posz also compared the more and the less satisfied agents as determined by the adaptation of the Hoppock Job Satisfaction Blank and came out with similar results as above, except that the more satisfied agents have had longer tenure in Extension.

¹A. Conrad Posz, "The Academic Background of Agricultural Extension Workers as Related to Selected Aspects of Work Adjustment," Microfilm, Ed. D., Thesis, Michigan State College, East Lansing, Michigan, 1952.

In another partly similar study, Mathews¹ compared the ratings of agents, as rated by their supervisors and specialists every two years for administrative purposes, with background characteristics of agents obtained from their personal files. His findings were as follows:

There was a fairly high positive relationship between the ratings and:

- a. General psychology courses taken, ($r = .71$).
- b. Tenure in Extension, ($r = .56$).

There was a positive low relationship between the ratings and:

- a. Quality of college record, ($r = .23$).
- b. Classroom teaching experience, ($r = .19$).
- c. Graduate courses completed, ($r = .15$).

There was a low negative relationship between the ratings and:

- a. Other agricultural experience, ($r = .27$).

Austman and Duncan's² Wisconsin study explored the background variables of 65 beginning county agents, that were believed to affect performance. They used three measures or criteria to compare these variables: (1) Role definition, as perceived by county agents and district leaders; (2) role fulfillment, as perceived by county agents; and

¹ Joseph L. Mathews, "A Method for Determining the Training Needs of County Agents as the Basis for Planning Training Programs," Microfilm, Ph. D. Thesis, University of Chicago, 1951.

² Helgi H. Austman and James A. Duncan, "Job Performance of Beginning New Cooperative Extension Agents in Wisconsin," A Report of Research in Cooperative Extension, Department of Agriculture and Extension Education, University of Wisconsin, October, 1961.

(3) role performance, as perceived by each district leader in the 38 Extension program functions. These functions were divided into six Extension program areas as follows:

1. Public and working relationship.
2. Program development.
3. Program implementation.
4. Leadership development.
5. Evaluation of accomplishments.
6. Professional improvement.

Part of their findings which are closely related to this study were as follows:

The relationship between the background variables and the agents performance, as perceived by the district leader, were found to be as follows:

a. Tenure was associated negatively with performance to some extent. This association occurred largely with: (1) program implementation; (2) program development; and (3) leadership development functions.

b. Age of agent was related positively to the agents performance of five of the six function areas and also with the mean performance score. Functions in the area of leadership development were the only ones showing no association with age.

c. Scholastic achievement in college, including grade-point-averages, was quite highly associated in a positive direction with the performance of all six of the function areas.

d. Grade point averages in humanities, agricultural courses, social sciences, and the college major were the ones most frequently associated with performance scores.

Background variables which did not have any association or relationship with performance were as follows:

- a. Grade-point-average in Extension education courses was not associated with many of the performance scores.
- b. Grade-point-average in basic science courses had no relationship with performance.
- c. Total number of course credits attained during college undergraduate training had no relationship with performance.

Austman and Duncan also studied the relationship of background factors of agents with perception of their own performance (role fulfillment), and importance of Extension functions (role definition).

Shortly they came out with the following results:

- a. Tenure was associated positively with role fulfillment scores.
- b. Age was associated, positively with role fulfillment scores of some functions and negatively related of other functions.
- c. There was a relatively low positive relationship between age and agent's role definition pertaining to several program development and implementation functions.
- d. There was a high positive correlation between scholastic achievement in college including grade-point-averages and role definition of agents.

The following background factors had little or no relationship to role definition by agents:

- a. Tenure of agents.
- b. The number of vocational and job experience gained by the agent during college.

Stock¹ studied background characteristics, training and other factors, associated with the success of the 62 beginning male county Extension agents in Wisconsin. He compared the top 23 and the bottom 23 agents as determined by: (1) Mean performance scores, obtained from administration of the Missouri County Agent Inventory and two other supplementary inventories; and (2) mean rating scores, obtained from ratings of the district leaders. Part of his findings directly pertinent to the present study are as follows:

1. The top twenty-three more effective agents had three or more hours of sociology and psychology courses.

2. The bottom twenty-three less effective agents: (a) had none to six hours of sociology and psychology courses; and (b) had one to six hours of agricultural education courses.

Nye's² Missouri study made an attempt to discover background, training, and other factors that when combined produced more effective Extension agents. He used ten (10) raters to determine the more and the less effective agents: (1) Three administrative--Assistant Director of Extension, the state agent (district supervisor) of each district, and the agent's salary, and two colleagues--subject matter specialists; (2) and five local people--three local leaders (farmer), and two from

¹Garfield R. Stock, "Development of an Aptitude Inventory for Selecting Male Extension Agents in Wisconsin," (Master's thesis, Department of Agriculture and Extension Education, University of Wisconsin, 1963), reported by Patrick G. Boyle, Research in Cooperative Extension Work (7th in a series, Department of Agriculture and Extension Education, University of Wisconsin, November, 1963). pp. 16-19.

²Ivan Nye, The Relationship of Certain Factors to County Agent Success, Agricultural Experiment Station, College of Agriculture, Research Bulletin 498 (Columbia, Missouri: University of Missouri, May 1952), 43 pp.

local professional and business people who had taken active interest in agricultural extension work. It is a side line interest to note that the administrative group rated the agents lower than the local group. Correlation was .53. Nye compared the background characteristics, academic and other, of the top one-third and bottom one-third agents. Part of his findings pertinent to this study were as follows:

1. College grades had some association with county agents success. More of the most effective agents had high averages and fewer had low averages than the least effective agents.

2. There were no significant differences between agents:

a. Who specialized narrowly in one agricultural department and those who took broader but intensive training.

b. Who had graduate work and those who had not.

c. Who took vocational agriculture in high school and those who did not.

d. General learning ability.

3. There were no statistically significant differences between the effectiveness of agents trained in different way (in-service training) or between agents who received in-service training and those who didn't. Although differences favoring the agents with training were near significant.

Merchants and Manufacturers Association California industrial study, cited by Pigon and Myers,¹ explored several characteristics of 50 successful and 50 non-successful employees. Criterion of success and failure used was: (1) employees, who had separated from the company, were considered failure group; (2) employees in the same occupation, who

¹Paul Pigon and Charles A. Myers, Personnel Administration (fourth edition, New York: McGraw-Hill Book Company, Inc., 1961), pp. 237-238.

had good work histories with the company, were considered successful. Several background factors of the two groups were compared. Part of the findings were as follows:

1. The successful group had an average age of 27 years.
2. The failure group had an average age of 24 1/2 years.
3. The majority of the failure group was hired during the months of April through August.
4. The majority of the successful group was hired during the months of August through November.

Collings¹ in reviewing Cook's dissertation on the training needs of county agricultural agents in Texas, reported his findings critically. Part of this research report which indirectly concerns this study was as follows:

1. Seventy per cent of the county agents would like advanced training in:
 - a. Extension education,
 - b. Sociology and,
 - c. Psychology courses.
2. Eighty-eight per cent of the State staff would like to see agents take advanced study in the above mentioned three fields.
3. A majority of the county agents did not have course work in extension education, agricultural education, and psychology as undergraduates. Most of the agents who had worked in these three fields indicated that they were most helpful.

¹ Mary Louise Collings, "Training Needs of County Agricultural Agents in Texas," Research Summary No. 48, pocket ER&T-52 (3-58), Federal Extension Service, U.S.D.A., Washington, D. C., 1958.

4. Four-fifths of the men county agents in Texas would take leave to do advanced training if some financial aid were provided.
5. The size of the family does not greatly influence the agents' desire to do advanced study.
6. County agents who have been in the service for five years or less are more interested in advanced degrees.
7. County agents under 40 years of age are the ones most willing to take leave to do advanced study and will do so for a smaller financial aid than older groups.

Federal Extension Service,¹ summarizing research findings of some 18 studies on the differential characteristics of the more effective and the less effective agents, reported the following:

1. The more effective agents had more advanced training since graduation from college.
2. The vocational interest of the more effective agents were more like those of personnel directors and social science teachers.
3. The vocational interests of the less effective agents were more like those of farmers and carpenters.
4. The more effective agents liked their extension job better and enjoyed better vocational adjustment.
5. The more effective agents spent more time in studying the county situation. They assumed positive leadership in county program planning, having a more widespread formal planning group with membership from all segments of the population. They had in mind definite objectives for their teaching program and were guided by those objectives in carrying out their plan of work. They related their annual program objectives to the long-time program objectives.
6. The more effective agents made a greater effort to reach rural people personally.

¹Extension Research and Training, "Administrative Organization and Management Characteristics of Successful Agents," Research Summary No. 8, Federal Extension Service, U.S.D.A., Washington, D. C., April 1956. Packet No. ER&T-50 (3-56).

7. The more effective agents prepared many more news stories during the year than did the less effective agents.

8. As supervisor and organizer of events the more effective agents used local leaders to perform this role more often than the less effective agents.

9. As an organizer of groups, the more effective agents organized and worked with more groups than less effective agents.

10. As salesmen of information and ideas the more effective agents: Spent more time in performance of this role; had more initiative and originality in convincing people that they should use the service; had more confidence in themselves; were more skillful in creating confidence in themselves.

The researcher made an attempt to review as many studies as possible directly relevant to the hypotheses under study, within the limits of time available. Therefore the review has not been exhaustive. The researcher observed that, even in the professional reviews there were very few studies dealing with the following characteristics assumed to affect the success of Extension agents: Age; previous job experience; number of credit hours and grades of sociology, psychology, humanities and extension education courses obtained at college. Nothing was cited on number of hours in communications and journalism courses obtained at college.

There is exhaustive research and a sizeable number of professional reviews in the teaching profession of formal classes, but very little concerning the teaching of informal voluntary masses of people. Also, business and industry have devoted considerable attention to the problem of selecting more productive or more successful employees. In their case they can measure productivity, but in extension work criteria or measuring yardsticks

are just developing. It is not an easy task to measure the productivity of a county Extension agent. The measuring of outcomes of instruction has long been believed to be intangible. This belief has delayed studies in this field.

CHAPTER III

ANALYSIS OF FACTORS ASSOCIATED WITH THE COUNTY AGENTS' EFFECTIVENESS ON THE JOB

Procedure

There were two main questions that had to be answered in regard to the analysis of data: (1) Could the data be treated as a sample? (2) And if the data were not to be considered a sample, what kind of "descriptive" statistical measures could be used to show the associations or relationships between different variables?

In considering the first question, it was not easy to assume that, the group of thirty county Extension agents under study, could have been treated as a sample. The researcher, after consulting with his graduate committee and the Head of the Statistics Department, Kansas State University, decided that the group could not be treated as a sample.

In the Scope and Procedure, outlined in Chapter I, it was mentioned how the thirty county Extension agents were obtained from the fifty-two agents included in Ringler's and Frutcheys studies. Of this group only those agents having perfect correlation between scores and ratings, in the top and bottom third, were chosen to represent the population of this study (also see appendix D).

In answer to the second question, "What kind of descriptive statistical measures could be used to analyze the data of this study?" there were several measures of relationship that could have been used. If the nature of data was to suggest manifold square contingency tables,

more than 5 x 5 cells, Pearson's "coefficient mean square contingency," as symbolized by the "C" formula, could have been used.¹ But in this study it was not considered necessary to carry the analysis of data beyond a simple coefficient of association. The slightly altered Yule's "Q",²

$$Q = \frac{(AB)(ab) - (Ab)(aB)}{(AB)(ab) + (Ab)(aB)}$$

commonly called "the coefficient of association" was the most suitable measure for the nature of data assembled. Advantages are that contingency coefficients require no assumptions of any sort, continuous or discrete variables, normal or skewed or any shape distributions for underlying traits, ordered or unordered series, and combinations there of are permissible.³ The only requirement is dichotomizing data to fit the four-fold (2x2) contingency table.

In similar studies nothing more in the analysis of relationships is attempted other than a simple description of associations. This is especially true in sociological studies. Hagood and Price wrote that

¹ Margaret J. Hagood and Daniel O. Price, Statistics for Sociologists (revised edition, New York: Henry Holt and Company, 1952), p. 370.

² Ibid., p. 361.

³ Quinn McNemar, Psychological Statistics (third edition, New York: John Wiley and Sons, Inc., 1962), pp. 200-201.

This is often the case when the study for the purpose of learning about a group for a better understanding of their particular situation, perhaps with a view toward changes in policy or administration for that group.¹

The "coefficient of association" represented by the symbol "Q" was calculated to determine associations that existed between effectiveness and various background and other characteristics of the county Extension agents, as spelled out by the hypotheses.² The data from each column were dichotomized with criteria based on merits of each column. The coefficient of associations or "Q" values indicate the degree, the direction and the existence of such associations. Statistical tests were not used to determine the significance of these associations in order to reject or accept the hypotheses. Instead the above mentioned qualities of "Q" were used as a guide to reject or accept the hypotheses, by an arbitrary figure of $\pm .16$ Q value. Any association between attributes, at or below this value of "Q" was not considered an important enough association to reject the null hypotheses. The following values of "Q" have been arbitrarily designated to describe the strength or the degree of associations between attributes:

.00 No association

.01 - .16 \pm Very low association--not important

.17 - .33 \pm Low association

¹Hagood and Price, op. cit., p. 363.

²Ibid., pp. 358-361.

- .34 - .66 + Moderate association
- .67 - .84 + High association
- .85 - .99 + Very high association
- 1.00 + Perfect association.

Method of Presentation

The (2 x 2) contingency tables were used in the analysis of data to determine the degree and the direction of associations. The analysis is presented in relation to the null hypotheses derived from the objective set up for this study.

The objective was to determine if there were important associations between the county agents effectiveness on the job and:

1. Tenure in Extension
2. Age
3. Academic major field of study at college
4. Previous job experiences in:
 - a. Teaching Vocational Agriculture, Extension Service and Sales work
 - b. The U. S. Army and National Guard
 - c. Total months of all previous job experiences
5. College undergraduate grade point average
6. The subject matter credit hours earned at college in:
 - a. Education courses
 - b. Extension Education courses
 - c. Psychology courses

- d. Sociology courses
- e. Speech and Journalism courses
- f. Humanity courses.

The Statement of Hypotheses

The following null hypotheses were developed to guide the collection and analysis of data:

1. There is no important association between the county agents' effectiveness on the job and tenure in the Kansas Extension Service.
2. There is no important association between age and the effectiveness of county Extension agents in Kansas.
3. There is no important association between academic major field of study in college and effectiveness of county Extension agents in Kansas.
4. There is no important association between the effectiveness of county Extension agents in Kansas and previous job experiences in:
 - a. Teaching Vocational Agriculture, Extension Service and Sales work.
 - b. The U. S. Army and National Guard.
 - c. Total months of all previous job experiences.
5. There is no important association between the effectiveness of county Extension agents and their college undergraduate grade-point-average.

6. There is no important association between the effectiveness of county Extension agents in Kansas and the subject matter credit hours earned in:

- a. Education courses
- b. Extension Education courses
- c. Psychology courses
- d. Sociology courses
- e. Speech and Journalism courses
- f. Humanity courses.

Tenure on the Job and Effectiveness

Hypothesis 1. There is no important association between the county agents' effectiveness on the job and tenure in the Kansas Extension Service.

The data on tenure for each agent were assembled from the personnel and other documentary files of the Kansas Extension Service. The analysis included only those agents who had a minimum of twelve months of tenure and over. The criteria used to calculate the months of tenure were agents' appointment date, and June 30th 1963 or agents' resignation date from service, whichever came first. Not all agents were employed in the Extension Service on June 30, 1963. Five of the less effective and one of the more effective agents resigned from the Service prior to this date.

One might expect that the more effective agents would have more experience on the job than the less effective agents. However, no

TABLE I

COMPARISON OF TENURE ON THE JOB BETWEEN THE MORE AND THE
LESS EFFECTIVE GROUPS OF COUNTY EXTENSION AGENTS
EMPLOYED IN KANSAS DURING JUNE 1, 1958 AND
JULY 30, 1963 BY RANGE, MEAN,
AND TOTAL MONTHS

Group of Agents	Tenure on the job		
	Range Months	Mean Months	Total Months
The more effective agents--			
Top 1/3rd	13-58	36.2	544
The less effective agents--			
Bottom 1/3rd.	12-57	36.3	545
Group differences	0	.1	1

differences were evident. The more effective group of agents had a range of 13-58 months of tenure, with a difference of 45 months between the least and the most experienced agent. The less effective group of agents had a range of 12-57 months of tenure, with a difference of 45 months between the least and the most experienced agent. The difference in range spread was zero. The average or mean tenure for the more effective group was 36.2 and 36.3 months for the other group of agents. Total months of tenure for the more effective agents was 544 months while the less effective agents had a total of 545 months. In view of the above, no further analysis was necessary. However, the data were dichotomized on the bases of the mean or average tenure for the whole group. Table II yielded a coefficient of association of $-.13$. This, very low negative association between the two attributes, was not high

TABLE II

DISTRIBUTION OF THE 30 COUNTY EXTENSION AGENTS EMPLOYED
IN KANSAS BETWEEN JULY 1, 1958 AND JUNE 30, 1963
BY MEAN TENURE IN MONTHS AND EFFECTIVENESS

Tenure on the job Months	Effectiveness of agents		
	Bottom 1/3rd No.	Top 1/3rd No.	Total No.
Above the mean of 36.3	7	6	13
Below the mean of 36.3	8	9	17
Total	15	15	30

$$Q = -.13$$

enough to reject the null hypothesis. Thus, the null hypothesis of no important association between effectiveness and tenure was accepted. However, this does not necessarily mean that experience on the job does not contribute to the effectiveness. The only conclusion that can be made is that factors other than tenure may have contributed to the effectiveness of agents in this particular study.

Age and Effectiveness of Agents

Hypothesis 2. There is no important association between age and the effectiveness of county Extension agents in Kansas.

The data on age of agents were assembled from personal files. The criterion utilized to calculate age to the nearest month, was each agent's appointment date to the Kansas Extension Service.

The analysis showed that the more effective agents had an age range of 274-396 months with one exception of 583 months. The range of the less effective agents was 258-373 months with an even distribution. The median age of the more effective agents was 330 months, while the median age of the less effective agents was 282 months. This comparison shows that there was an important difference between the two groups of agents, both in the range and the median age. To facilitate further analysis, the age distribution, of both groups combined, was dichotomized to determine the degree of associations. Table III shows this distribution and the dichotomy. The median age for both groups was 311.5 months. Ten of the fifteen more effective agents were above and five were below the median age. On the other hand, only five of the fifteen less effective agents were above, and ten were below the median age. The degree of association was $+.60$. In other words, age was positively related with the effectiveness. This was considered to be a moderate association between age and the effectiveness of agents. The maximum arbitrary "Q" value, set earlier by the researcher to assist acceptance of the hypothesis, was $+.16$ and below. The association of $+.60$ exceeds this figure. Thus, the null hypothesis of no important association between age and effectiveness was rejected. This means that older agents were more effective than younger agents. The reader would recall from the previous analysis of data on hypothesis 1, that both groups of agents practically had matched tenure on the job. This coincidence created an ideal controlled condition to test the age of

TABLE III

DISTRIBUTION OF THE 30 COUNTY EXTENSION AGENTS EMPLOYED
IN KANSAS BETWEEN JULY 1, 1958 and JUNE 30, 1963
BY MEDIAN AGE AND EFFECTIVENESS

The median age of agents in months	Effectiveness of agents		
	Bottom 1/3rd	Top 1/3rd	Total
Above the median of 311.5 months	5	10	15
Below the median of 311.5 months	10	5	15
Total	15	15	30

Q = +.60

agents versus effectiveness. It is assumed that age and tenure are closely interrelated. In this case one can state that the effectiveness of older agents may not be due to tenure on the job. Probably another statement could be that agents above 26 years of age have more potentiality for effectiveness in Extension work.

Academic Major Field of Study in College and Effectiveness

Hypothesis 3. There is no important association between academic major field of study in college and effectiveness of county Extension agents in Kansas.

The data on the academic major field of study at college were determined from each agent's college transcript, as in Table IV.

First, to show similarity between groups, the major fields of

TABLE IV

DISTRIBUTION OF THE MORE AND THE LESS EFFECTIVE 30 COUNTY
EXTENSION AGENTS EMPLOYED IN KANSAS BETWEEN
JULY 1, 1958 AND JUNE 30, 1963, ACCORDING
TO MAJOR FIELD OF STUDY AT COLLEGE

Major field of study in college		Effectiveness of agents	
Baccalaureate	Masters	Top 1/3rd No.	Bottom 1/3rd No.
Animal Husbandry	Animal Husbandry	1	-
Horticulture	Horticulture	1	-
Agric. Education	Agric. Education	1	-
Agric. Economics	Agric. Education	1*	-
Agric. Education	Animal Husbandry	1	-
Agron. An. Husb.	Voc. Education	1*	-
Animal Husbandry	Ext. Education	1	-
Agric. Education	--	2+	1
Agric. Economics	--	-	3
Agronomy	--	2+	4
Animal Husbandry	--	2*	4
Dairy Husbandry	--	2+	2
Agric. Administration	--	-	1
Total		15	15

*All of these agents had 4-21 hours advanced credits, probably for another degree.

+One-half of these agents had 3-7 hours advanced credits probably for another degree.

study were dichotomized as "technical" and "non-technical" majors. The technical major fields are animal and dairy husbandry, horticulture and agronomy. The non-technical major fields are education, agricultural economics and agricultural administration. With this dichotomy it can be stated that "practically both groups of agents had similar major fields of study." Table V shows this similarity. Eleven of the fifteen more effective agents had technical majors--animal and dairy husbandry, agronomy and horticulture. Four had non-technical majors--education and agricultural economics. Similarly, ten of the fifteen less effective agents had technical majors--animal and dairy husbandry, agronomy, and the remaining five had non-technical majors--education, agricultural economics, and agricultural administration. The coefficient of association was determined from Table V. Here the coefficient of association was used to reinforce the decision on the similarities of the two groups. The degree of association was very low-- $Q = +.15$. Hence the two groups had similar technical background.

Secondly another important phenomenon was that the two groups had considerable difference in attitude toward a M. S. degree or advanced study. As reported in Table IV, seven of the fifteen more effective agents had Master of Science degrees, and two of these had 4-8 hours credit beyond the M.S. The remaining eight agents of this group did not possess a masters degree, but five had 3-21 hours credit beyond the B.S., and only three did not show interest in a Master of Science degree. In comparison, none of the fifteen less effective agents had an M. S. degree nor advanced credit. The difference between the two

TABLE V

DISTRIBUTION OF THE MORE AND THE LESS EFFECTIVE 30 COUNTY
EXTENSION AGENTS EMPLOYED IN KANSAS BETWEEN
JULY 1, 1958 AND JUNE 30, 1963 BY
TECHNICAL MAJOR FIELD OF STUDY

Major field of study at college	Effectiveness of agents		
	Bottom 1/3rd No.	Top 1/3rd No.	Total No.
Technical major field of study	10	11	21
Non-technical major field of study	5	4	9
Totals	15	15	30

$$Q = +.15$$

groups was evident. Here it was not necessary to determine the coefficient of association between effectiveness and attitude on advanced degrees, because the "Q" value would be +1.00 or a perfect association.

Thirdly, the most important phenomenon in the analysis of data presented in Table IV, was that over 50 per cent of all agents had majors in the field of Education and almost all were from the more effective group. The data were dichotomized on the basis of Education majors and non-Education majors.

Table VI shows this comparison between the two groups. It was found that seven of the fifteen more effective agents had such majors as Agricultural Education, Vocational Education and Extension Education, while only one of the fifteen less effective agents had majored in

TABLE VI

DISTRIBUTION OF THE 30 COUNTY EXTENSION AGENTS EMPLOYED IN
KANSAS BETWEEN JULY 1, 1958 AND JUNE 30, 1963 BY
DICHOTOMIZED MAJOR FIELD OF STUDY
AND EFFECTIVENESS

Agent's major field of study at college	Effectiveness of agents		
	Bottom 1/3rd No.	Top 1/3rd No.	Total No.
Ag., Voc., and Ext. education majors	1	7	8
Not Ag., Voc., and Ext. education majors	14	8	22
Total	15	15	30

$$Q = +.84$$

Agricultural Education. The coefficient of association was calculated to determine the degree of association which existed between effectiveness and Education major field of study. The "Q" value was $+.84$. This was a high positive association, well above the non-important limit of $Q_{+.16}$. The above finding that both groups had similar "technical" background, in the analysis of "technical" major fields of study, substantiates this association between major field of study in Education and effectiveness. The researcher rejected the null hypothesis of no important association between major field of study and effectiveness.

In identifying the similarities and the differences of the two groups of agents, the researcher believed that both technical subject matter and non-technical education majors are essential elements of

effectiveness. The concentration of agents with such dual majors to the top one-third group of agents supports this conclusion.

Previous Job Experiences of Agents and Effectiveness

Hypothesis 4. There is no important association between the effectiveness of county Extension agents in Kansas and previous job experiences in:

- a. Teaching Vocational Agriculture, Extension Service and Sales work,
- b. The U. S. Army and National Guard,
- c. Total months of all previous job experiences.

The data on previous job experiences were assembled from the application forms and other documents in each agent's personal file. These were tabulated and presented in Table VII. It was necessary to amalgamate columns one through four and columns five and six to facilitate analysis and comparison of the two groups. Column seven, miscellaneous experiences, was not compared. However, it was included in the table to facilitate summation of months of all previous job experiences of the two groups in column eight. First to compare number of agents as in column 1-4, it was found that seven of the fifteen more effective agents had previous job experiences as follows:

Four in teaching Vocational Agriculture

One in 4-H Club agent, Agricultural agent and Sales

One in 4-H Club agent and

One in Agricultural agent.

TABLE VII

PREVIOUS JOB EXPERIENCES OF THE MORE EFFECTIVE AND THE LESS
EFFECTIVE COUNTY EXTENSION AGENTS IN KANSAS EMPLOYED
BETWEEN JULY 1, 1958 AND JUNE 30, 1963

Agent's rank and code nos.		Months of previous job experiences							
		Tchnng. Voc.Ag.	4-H Agnt.	Cnty.Agnt.	Sales Army	Nat'l. Guard	Other Misc.	Totals	
Column nos.		1	2	3	4	5	6	7	8
T O P 1/3 A G E N T S	1	-	31	39	12	-	-	-	82
	2	-	-	71	-	-	2	-	73
	3	-	-	-	-	33	-	18	51
	4	-	-	-	-	-	4	18	22
	5	52	-	-	-	38	-	175	265
	6	60	-	-	-	24	-	-	84
	7	-	-	-	-	48	-	6	54
	8	54	-	-	-	6	-	-	60
	9	-	-	10	-	22	-	3	35
	10	-	-	-	-	36	-	47	83
	11	-	-	-	-	36	-	6	42
	12	42	-	-	-	24	-	-	66
	13	-	-	-	-	-	-	14	14
	14	-	-	-	-	34	-	10	44
	15	-	-	-	-	6	-	24	30
Totals		208	41	110	12	307	6	321	1005
B O T T O M 1/3 A G E N T S	1	-	-	-	-	22	-	30	52
	2	-	-	-	-	-	-	8	8
	3	-	-	-	-	-	-	10	10
	4	-	-	-	-	24	-	63	87
	5	-	-	-	-	-	-	8	8
	6	-	-	-	-	-	-	7	7
	7	-	-	-	-	-	-	15	15
	8	-	-	-	-	24	-	58	82
	9	-	-	-	-	24	-	12	36
	10	-	-	-	-	34	-	-	34
	11	-	-	-	10	24	-	14	48
	12	-	-	-	-	22	-	24	46
	13	-	-	-	-	-	-	17	17
	14	-	-	-	-	-	-	9	9
	15	-	-	-	-	-	-	18	18
Totals		-	-	-	10	174	-	293	477

TABLE VIII

DISTRIBUTION OF THE 30 COUNTY EXTENSION AGENTS, EMPLOYED
IN KANSAS BETWEEN JULY 1, 1958 AND JUNE 30, 1963
BY PREVIOUS JOB EXPERIENCE IN SALES,
VOCATIONAL AGRICULTURE TEACHING,
4-H AND AGRICULTURAL AGENT
WORK, AND EFFECTIVENESS

Agent's previous job experiences	Effectiveness of agents		
	Bottom 1/3rd	Top 1/3rd	Total
Sales--Voc. Ag. Teaching--4-H and Ag. Agent work	1	7	8
No Sales--Voc. Ag. Teaching-- 4-H and Ag. Agent work	14	8	22
Totals	15	15	30

$$Q = +.84$$

The remaining eight of the more effective agents did not have such experiences. In contrast, only one of the fifteen less effective agents had sales experience and the remainder (14) did not have any of the above mentioned experiences. Table VIII was constructed to determine the degree of associations and also to show the above difference more clearly. The coefficient of association between effectiveness and previous experiences in teaching Vocational Agriculture, 4-H Club agents, county Agricultural agents and Sales work of agents was $+ .84$. Thus, the null hypothesis of no important association between effectiveness and previous Vocational Agriculture teaching, Extension service and Sales work experience was rejected.

Hypothesis 4(b). The number of agents with service in the Army and National Guard were treated as one column, because both experiences were similar. It was found that of the fifteen more effective agents, eleven had experiences in the Army and two in the National Guard. Only two of the more effective agents did not have Army or National Guard experience. In comparison, only seven of the fifteen less effective agents had experience in the Army, and the remaining eight agents did not have such experiences. Table IX shows this difference of agents. The coefficient of association between effectiveness and Army and National Guard experience of agents was $+ .76$. This was a high positive association. One important phenomenon which cannot be overlooked was that the less effective group of agents were younger. This group had eight agents 23 years old and below. They were the same above mentioned eight agents of the less effective group with no Army experience. In comparison, the more effective group had only four agents 23 years old and younger, and only one of the two not having Army and National Guard experience was below 23 years old. The other agent with no Army experience was 30 years old. The coefficient of association between age and service in the Army or National Guard would reach unity (perfect association).

Another point of interest was the previous finding of age versus effectiveness. The older agents were more effective than younger agents, "Q" value between age and effectiveness was $+ .60$. Thus, one might say that, "since there was a perfect association between age and service in the Army, and that the effective group was older, the high positive

TABLE IX

DISTRIBUTION OF THE MORE AND THE LESS EFFECTIVE 30 COUNTY
EXTENSION AGENTS, EMPLOYED IN KANSAS BETWEEN
JULY 1, 1958 AND JUNE 30, 1963, BY PREVIOUS
JOB EXPERIENCE IN THE U. S. ARMY
AND NATIONAL GUARD

Agent's previous job experience	Effectiveness of agents		
	Bottom 1/3rd	Top 1/3rd	Total
Army and National Guard	7	13	20
No Army and National Guard	8	2	10
Total	15	15	30

$$Q = +.76$$

association of 'Q' .76 between experience in the Army and effectiveness was a result of older age and not of service in the Army." This is logical, but it was not the purpose of this study to make a cause and effect discrimination. This could only be determined under controlled conditions with a different research design. Obviously age was closely interrelated with both service in the Army and National Guard, and effectiveness. As far as this study is concerned the author would rather say that both older age and experience in the Army were factors associated with the effectiveness of these agents.

The researcher, considering the high positive association between effectiveness and Army and National Guard experience, rejected the null hypothesis. This is to say that there is a high positive association

between effectiveness and service in the Army and National Guard.

Hypothesis 4(c). The data on total months of all previous job experiences were analyzed from Table VIII, column 3. It was found that the more effective group of agents had:

1005 months, total previous job experiences

14-265 months, range of previous job experiences and

54 months median previous job experiences.

In comparison the less effective group had:

477 months, total previous job experiences

7-87 months range of previous job experiences and

18 months median previous job experiences.

There was a difference between the two groups of agents. The more effective group had approximately twice as much previous job experience as the less effective group. To facilitate further analysis, the data on total months of previous job experiences were dichotomized on the basis of median months of experience. The median previous experience for all agents was 43 months. The number of agents falling below and above this criterion of the dichotomy was determined. Table X shows this distribution of agents. Ten of the fifteen more effective agents had experiences above, and five below the median. In comparison, five of the fifteen more effective agents were above, and ten were below the median. The coefficient of association between total months of previous job experience and effectiveness was +.60. This was a positive moderate association. In other words, there was a positive moderate degree of

TABLE X

DISTRIBUTION OF THE 30 COUNTY EXTENSION AGENTS EMPLOYED IN
KANSAS BETWEEN JULY 1, 1958 AND JUNE 30, 1963 BY
MEDIAN MONTHS OF PREVIOUS JOB EXPERIENCES
AND EFFECTIVENESS

Total previous job experiences of agents months	Effectiveness of agents		
	Bottom 1/3rd No.	Top 1/3rd No.	Total No.
Above the median			
+43	5	10	15
Below the median			
-43	10	5	15
Totals	15	15	30

$$Q = +.60$$

association between previous experience and effectiveness, warranting the rejection of the null hypothesis. Here again it can be argued that age is closely associated with total months of all previous job experiences. In fact, age and experience were highly associated. A table was constructed to determine the degree of association between these two attributes. The dichotomies used were the median months of age and the median months of total experiences. Table XI shows this distribution. It was found that out of 30 agents:

- 13 were older and had had more experience
- 13 were younger and had had less experience
- 2 were older but had had less experience
- 2 had had more experience but were younger.

TABLE XI

DISTRIBUTION OF THE 30 COUNTY EXTENSION AGENTS EMPLOYED IN
KANSAS BETWEEN JULY 1, 1958 AND JUNE 30, 1963 BY
THE MEDIAN AGE AND THE MEDIAN
PREVIOUS JOB EXPERIENCE

Age of agents in months	Previous job experiences of agents in months		
	Below Md. of 43	Above Md. of 43	Total
Agents above the median age of 311.5 months	2	13	15
Agents below the median age of 311.5 months	13	2	15
Totals	15	15	30

$$Q = +.95$$

The coefficient of association between age and experience was $+ .95$. This was a very high positive association. But again it was not the purpose of this study to discriminate which one of the two attributes, age or total months of all previous job experience, makes a more effective agent. Such a discrimination is only possible through a cause and effect study. As far as this study was concerned, it can be stated that older age, service in the Army and total months of all previous job experiences were factors associated with the effectiveness of these agents.

The researcher, considering the moderate association that existed between effectiveness and total months of previous job experiences, rejected the null hypothesis of no important association between these two attributes.

College Undergraduate Grade-Point-Average and Effectiveness of Agents

Hypothesis 5. There is no important association between the effectiveness of county Extension agents and their college undergraduate grade-point-average.

The data on the undergraduate college grade-point-average of agents were calculated to the first decimal point, from college transcripts. For convenience, grade-point-average was abbreviated as G.P.A. The calculations of G.P.A. were based on a fourpoint grading system (i.e. A = 4 points, B = 3 points, C = 2 points, D = 1 point and failure F = 0 point). In analyzing the data, the fifteen more effective agents had:

2.1 - 3.0 G.P.A. range

2.6 G.P.A. median.

In comparison, the fifteen less effective agents had:

2.2-2.9 G.P.A. range

2.4 G.P.A. median.

These figures do not suggest considerable differences as one might expect between the two groups of agents. There was practically no difference between the two ranges of G.P.A.'s of agents. There was only a .2 G.P.A. difference between the two medians of each group. To facilitate further analysis, the data for both groups were combined and the median G.P.A. for all agents was determined. It was 2.5. Table XII shows the distribution of the more and the less effective agents according to the median G.P.A. It was found that of the fifteen more effective agents:

TABLE XII

DISTRIBUTION OF THE 30 COUNTY EXTENSION AGENTS EMPLOYED IN
KANSAS BETWEEN JULY 1, 1958 AND JUNE 30, 1963 BY
COLLEGE UNDERGRADUATE MEDIAN G.P.A.
AND EFFECTIVENESS

College undergraduate G.P.A. of agents	Effectiveness of agent		
	Bottom 1/3rd No.	Top 1/3rd No.	Total No.
Agents at or above the median 2.5	7	10	17
Agents below the median 2.5	8	5	13
Totals	15	15	30

$$Q = +.39$$

10 were at or above the median

5 were below the median.

In comparison, out of fifteen less effective agents:

7 were at or above the median

8 were below the median.

Yule's "Q" or the degree and direction of association was $+.39$. This was a moderate positive association between G.P.A. and effectiveness. Since the "Q" value of $+.39$ is above the set limit of $+.16$, the null hypothesis of no important association between G.P.A. and effectiveness, was rejected. This rejection warrants the statement that there was some association between G.P.A. and effectiveness. This moderate positive association is probably due to the fact that agents upon entering the

Kansas Extension Service were partly selected on basis of G.P.A. It was one of the criteria used in the selection process. Naturally under such conditions major differences between the two groups should not be expected.

College Subject Matter Credits and Effectiveness

Hypothesis 6. There is no important association between the effectiveness of county Extension agents in Kansas and the subject matter credit hours earned in:

- (a) Education courses
- (b) Extension Education courses
- (c) Psychology courses
- (d) Sociology courses
- (e) Speech and Journalism courses
- (f) Humanity courses.

It was assumed that a county Extension agent, to be effective in his job needed to have: (1) Appropriate knowledge of teaching methods; (2) an understanding of the Extension organization and policies; (3) an understanding of the individual human being; (4) an understanding of the society or group behavior; (5) some knowledge in the techniques of written and oral communication; and (6) an understanding of government. Subject matter areas of the study were classified according to the above criteria. It was assumed that areas of study to obtain the needed education for effectiveness, were courses in Education, Extension Education, Psychology, Sociology, Speech and Journalism, and Humanities. The data were assembled and tabulated from each agent's college transcript. This

tabulation is presented in Table XIII. Both undergraduate and graduate courses were included.

Hypothesis 6(a). Education courses taken were Methods of Teaching in Agriculture, Vocational Education, Teaching Participation in Agriculture, Methods of Teaching and Management in Secondary Agriculture, General Methods of Elementary Teaching, Principles of Secondary Education, Philosophy of Education, Principles of Practical Guidance, Weekly Teaching Secondary Agriculture, Apprentice Teaching Secondary Agriculture, Planning and Community Programming, Methods of Teaching Vocational Agriculture, Administration of Program in Vocational Agriculture, Visual Education, Program Planning Vocational Agriculture, Instruction to Teaching Vocational Agriculture, Problem in Education, Philosophy of Vocational Education, Problem Methods in Agricultural Education, and Organization Problem in Teaching Farm Mechanics. There were ten agents who took the above Education courses. Eight of these were from the more effective group of agents, and two were from the less effective group.

In analyzing the data in Table XIII, it was found that the more effective group had a total of 115 hours Education courses. The hours ranged from 3 to 24. The mean was 14.3 hours. In comparison, the less effective group had a total of 15 hours Education courses with a range of 3-12 hours. The mean was 7.5 hours. There was a difference between the two groups of agents. To facilitate further analysis and calculate the coefficient of association between effectiveness and Education courses,

TABLE XIII

SUBJECT MATTER CREDIT COURSES EARNED AT COLLEGE GRADUATE AND
UNDERGRADUATE LEVELS BY THE MORE AND THE LESS EFFECTIVE
30 COUNTY EXTENSION AGENTS EMPLOYED IN KANSAS
BETWEEN JULY 1, 1958 TO JUNE 30, 1963

Agents' effective- ness Code nos.		Courses taken at college					
		Educa- tion	Ext. Edu- cation	Psy- chology	Soci- ology	Speech & Journal- ism	Humani- ties
		hrs.	hrs.	hrs.	hrs.	hrs.	hrs.
	1	-	3	-	3	2	6
T	2	-	7	-	11	7	6
O	3	-	5	-	-	7	-
P	4	-	-	3	-	4	3
	5	34	3	8	-	12	-
1/3	6	18	3	9	9	12	8
	7	12	-	9	3	3	9
A	8	18	-	3	-	2	8
G	9	12	2	9	3	6	4
E	10	-	-	-	-	5	-
N	11	-	-	-	-	6	8
T	12	15	2	9	6	6	3
S	13	3	9	-	3	11	11
	14	-	-	-	-	8	7
	15	3	5	-	-	7	6
Grp. Totals		115	39	50	38	98	79
B	1	12	2	9	3	6	4
O	2	-	-	-	3	6	8
T	3	-	-	-	3	2	6
T	4	3	6	3	3	8	-
O	5	-	3	-	3	8	7
M	6	-	-	3	3	5	6
	7	-	3	-	-	6	6
1/3	8	-	-	-	3	6	7
	9	-	3	3	3	2	8
A	10	-	-	-	-	6	7
G	11	-	-	3	6	6	4
E	12	-	-	-	-	4	4
N	13	-	-	-	-	5	6
T	14	-	-	-	3	2	6
S	15	-	-	6	-	5	8
Grp. Totals		15	17	27	33	77	87

the data were dichotomized on the basis of: (1) Those who had taken, and those who had not taken Education courses; and (2) those agents falling below and above the mean credit hours of all agents who had credits in Education courses.

Table XIV shows the distribution of agents by the first dichotomy. Eight of the fifteen more effective agents had taken Education courses and seven of them had not, while only two of the fifteen less effective agents had taken Education courses and thirteen had not. The coefficient of association as calculated by Yule's "Q" was $+.70$. This was a high positive association between effectiveness and Education courses.

TABLE XIV

DISTRIBUTION OF THE 30 COUNTY EXTENSION AGENTS EMPLOYED IN
KANSAS BETWEEN JULY 1, 1958 AND JUNE 30, 1963 BY
EDUCATION COURSES AND EFFECTIVENESS

College courses in Education	Effectiveness of agents		
	Bottom 1/3rd No.	Top 1/3rd No.	Total No.
Agents having credits in Education	2	8	10
Agents with no credits in Education	13	7	20
Totals	15	15	30

$$Q = +.70$$

There was no need to construct a contingency table to calculate the degree of association for the second dichotomy. The mean of those agents having taken Education courses was 13 hours. The two agents from the less effective group having Education courses were below this mean. Thus, the coefficient of association would reach unity, that is "Q" would be +1.00. This was a perfect positive association. The researcher rejected the null hypothesis of no association between effectiveness and Education courses as defined at the beginning of this analysis. The analysis of this data left no doubt that there was a high positive association between these two attributes.

Hypothesis 6(b). Extension Education courses taken by agents were History and Objectives of Extension Service, Extension Information, Extension Program Planning, 4-H Organization and Procedures, Extension Organization and Policies, Teaching Adult Classes Agriculture, Procedures and Teaching for Work with Groups, American Agricultural Policies, Extension Teaching Methods, Methods of Adult Education, and Adult Education. There were fourteen agents who had a total of 56 credit hours in the above Extension Education courses.

The analysis of data between the two groups of agents in Table XIII shows that the more effective group had a total of 39 hours Extension Education courses with a range of 2-9 hours. The mean was 4.3 hours. In comparison, the less effective group had a total of seventeen hours Extension Education courses with a range of 2-6 hours. The mean was 3.4 hours. There was considerable differences between the two groups

especially in total hours of Extension Education courses taken. To facilitate further analysis and calculation of the coefficient of association between effectiveness and Extension Education courses, the data were dichotomized on bases of: (1) Those agents who had credits and those who had no credits in Extension Education courses; and (2) mean credit hours of those agents who had credits in Extension Education courses--above mean and below mean dichotomy.

Table XV shows the distribution of agents according to the first dichotomy. Nine of the fifteen more effective agents had credits and six had no credits in Extension Education, while only five of the fifteen less effective agents had credits and ten had no credits in Extension Education courses. The coefficient of association as calculated by Yule's "Q" was $+.50$. This was a moderate positive association between effectiveness of agents and Extension Education courses.

TABLE XV

DISTRIBUTION OF THE 30 COUNTY EXTENSION AGENTS EMPLOYED IN
KANSAS BETWEEN JULY 1, 1958 AND JUNE 30, 1963
BY EXTENSION EDUCATION CREDITS
AND EFFECTIVENESS

Extension Education courses	Effectiveness of agents		
	Bottom 1/3rd	Top 1/3rd	Total
Agents having credits in Extension Education	5	9	14
Agents having no credits in Extension Education	10	6	16
Totals	15	15	30

$$Q = +.50$$

Table XVI shows the distribution of agents according to the second dichotomy of mean credit hours of all agents having credits in Extension Education courses. The mean of all agents was 4 credit hours. Four of the nine more effective agents having credits in Extension Education were above and five were below the mean. In comparison, one of the five less effective agents having credits in Extension Education courses was above and four below the mean. The coefficient of association was $+ .52$. This was a moderate positive association between effectiveness and Extension Education courses.

TABLE XVI

DISTRIBUTION OF THE 14 COUNTY EXTENSION AGENTS EMPLOYED IN KANSAS BETWEEN JULY 1, 1958 AND JUNE 30, 1963 BY MEAN CREDIT HOURS IN EXTENSION EDUCATION COURSES AND EFFECTIVENESS

Extension Education courses	Effectiveness of agents		
	Bottom 1/3rd No.	Top 1/3rd No.	Total No.
Agents above the mean of 4 credit hours	1	4	5
Agents below the mean of 4 credit hours	4	5	9
Totals	5	9	14

$$Q = +.52$$

The two "Q" values of $+.50$ and $+.52$, suggest that the number of Extension Education courses may not be too important as long as an agent has some credit in this field. In other words agents who had two courses in Extension Education were not any more effective than those who had one course. The researcher rejected the null hypothesis of no important association between effectiveness and Extension Education courses.

Hypothesis 6(c). Psychology courses taken by agents were General Psychology, Educational Psychology I, Educational Psychology II, and Child Teacher Psychology. Thirteen agents had a total of 77 credit hours in the above Psychology courses.

The analysis of data between the two groups of agents, Table XIII, shows that the more effective group had a total of fifty credit hours of Psychology courses with a range of 3-9 hours. The mean was 7.1 hours. In comparison, the less effective group had a total of 27 credit hours of Psychology courses with a range of 3-9 hours. The mean was 4.5 hours. This group comparison shows that there was no difference in the range of credit hours, but there were considerable differences both in total hours of credits and the mean credit hours of each group. The difference in the mean credit hours was important because the more effective group averaged more than two courses in Psychology, while the less effective group averaged less than two courses. In fact, five members of the more effective group had credits in three Psychology courses and the remaining two had one course each. While of the less effective group

only one had three courses, one had two courses, and four had one course in Psychology. To facilitate further analysis and to calculate the coefficient of association between effectiveness and Psychology courses the data were dichotomized on bases of: (1) Those agents having credits and those with no credits in Psychology courses; and (2) mean credit hours of those agents having Psychology courses, number of agents below and above the mean dichotomy.

Table XVII shows the distribution of agents according to the first dichotomy. Seven of the fifteen more effective agents had credits and eight had no credits in Psychology courses, while six of the fifteen less effective agents had credits while nine had no credits in Psychology courses. The coefficient of association as calculated by Yule's 'Q' was .13. This was a very low positive association between effectiveness and Psychology courses.

TABLE XVII

DISTRIBUTION OF THE 30 COUNTY EXTENSION AGENTS EMPLOYED IN
KANSAS BETWEEN JULY 1, 1958 AND JUNE 30, 1963 BY
PSYCHOLOGY COURSES AND EFFECTIVENESS

Psychology courses	Effectiveness of agents		
	Bottom 1/3rd No.	Top 1/3rd No.	Total No.
Agents who had credits in Psychology courses	6	7	13
Agents who had no credits in Psychology courses	9	8	17
Totals	15	15	30

Q = +.13

Table XVIII shows the distribution of agents according to the second dichotomy of the mean credit hours of all agents having credits in Psychology courses. Their mean was 5.9 credit hours. This mean actually discriminated agents on bases of one course and more than one course in Psychology. Five of the seven more effective agents having credits in Psychology courses were above and two were below the mean. In comparison, two of the six less effective agents having credits in Psychology courses were above and four were below the mean credit hours. The coefficient of association was $+.66$. This was a moderate positive association between effectiveness and Psychology courses, as dichotomized by the mean credit hours.

The "Q" value of $+.13$ between effectiveness and Psychology courses, according to the first dichotomy of agents having Psychology credits and agents with no Psychology credits, was below the non-important set limit of $+.16$ "Q" value. Hence there was no important association between effectiveness and Psychology courses. But the "Q" value of $+.66$, according to the second dichotomy of 5.9 mean credit hours or actually by one and more than one Psychology courses, was well above the non-important limit of $+.16$. As such, there was an important association between effectiveness and Psychology courses. Should the hypothesis of no important association between effectiveness and Psychology courses be accepted or rejected? The researcher decided to reject the hypothesis by stating that, "There was an important positive association between effectiveness and more than one Psychology course." In other words one

TABLE XVIII

DISTRIBUTION OF THE 13 COUNTY EXTENSION AGENTS EMPLOYED IN
KANSAS BETWEEN JULY 1, 1958 AND JUNE 30, 1963 BY
MEAN CREDIT HOURS IN PSYCHOLOGY COURSES
AND EFFECTIVENESS

Psychology courses	Effectiveness of agents		
	Bottom 1/3rd No.	Top 1/3rd No.	Total No.
Agents above the mean of 5.9 credit hours	2	5	7
Agents below the mean of 5.9 credit hours	4	2	6
Totals	6	7	13

Q = +.66

course in Psychology did not have an important association with the effectiveness of agents, but two or more courses had an important association with the effectiveness of agents.

Hypothesis 6(d). Sociology courses taken by agents were Sociology, Urban Sociology, The Family, Rural Sociology, Educational Sociology, Principles of Rural Sociology, Social Science, Research Current Social Problem, Contemporary Sociology, Advanced Rural Sociology, Sociological thought, and Elements of Sociology. There were seventeen agents who had a total of 71 credit hours in the above Sociology courses.

The analysis of data between the two groups of agents as in Table XIII shows that the more effective group had a total of 38 credit

hours in Sociology courses with a range of 3-11 hours. The mean was 5.4 credit hours. In comparison, the less effective group had a total of 33 credit hours with a range of 3-6 hours. The mean was 3.3 hours. This group comparison shows that there was very little difference between total hours of Sociology courses each group had, but there were differences both in the range and mean credit hours of each group. These differences may or may not be important, because of the seventeen agents who had Sociology credits only four had more than one course. To facilitate further analysis and to calculate the coefficient of association between effectiveness and Sociology courses, the data were dichotomized on bases of: (1) Those agents who had credits and those who had no credits in Sociology courses; and (2) mean credit hours of those agents who had credits in Sociology courses--number of agents below and above mean dichotomy.

Table XIX shows the distribution of agents according to the first dichotomy. Ten of the fifteen less effective agents had credits and five had no credits in Sociology courses, while only seven of the fifteen more effective agents had credits and eight had no credits in Sociology courses. The coefficient of association was $-.39$. This was an important negative association between effectiveness and Sociology courses.

Table XX shows the distribution of agents according to the second dichotomy of the mean credit hours of those agents who had credits in Sociology courses. Their mean was 4.1 credit hours. This

TABLE XIX

DISTRIBUTION OF THE 30 COUNTY EXTENSION AGENTS EMPLOYED IN
KANSAS BETWEEN JULY 1, 1958 AND JUNE 30, 1963 BY
SOCIOLOGY COURSES AND EFFECTIVENESS

Sociology courses	Effectiveness of agents		
	Bottom 1/3rd No.	Top 1/3rd No.	Total No.
Agents who had credits in Sociology courses	10	7	17
Agents who had no credits in Sociology courses	5	8	13
Totals	15	15	30

$$Q = -.39$$

mean actually discriminated agents on basis of one course and more than one course in Sociology. Only one of the ten less effective agents was above and nine were below the mean. In comparison three of the seven more effective agents who had credits in Sociology courses were above and four were below the mean credit hours. The coefficient of association was $+.74$. This was a high positive association between effectiveness and Sociology courses as dichotomized by the mean credit hours.

The "Q" value of $-.39$, between effectiveness and Sociology courses, according to the first dichotomy, was above the non-important set limit of $+.16$ "Q" value. Hence, there was important negative association between effectiveness and Sociology courses. The "Q" value of $+.74$, according to the second dichotomy was well above the non-important set

TABLE XX

DISTRIBUTION OF THE 17 COUNTY EXTENSION AGENTS EMPLOYED IN
KANSAS BETWEEN JULY 1, 1958 AND JUNE 30, 1963 BY
THE MEAN CREDIT HOURS IN SOCIOLOGY COURSES
AND EFFECTIVENESS

Sociology courses	Effectiveness of agents		
	Bottom 1/3rd No.	Top 1/3rd No.	Total No.
Agents above the mean of 4.1 credit hours	1	3	4
Agents below the mean of 4.1 credit hours	9	4	13
Totals	10	7	17

$$Q = +.74$$

limit of $\pm .16$. As such there was again an important association between effectiveness and Sociology courses, but this time the direction of association was positive. Could the association between these two attributes be both positive and negative? The only explanation to these two different directions of association could be that, having credits in only one Sociology course might have had a negative effect on the effectiveness of agents. But having credits in two or more Sociology courses might have reversed the direction of association to a positive effect on effectiveness. The researcher, regardless of the direction of association between the two attributes, had to reject the null hypothesis of no important association between effectiveness and Sociology courses,

by stating that "There was an important positive association between the effectiveness of agents and more than one Sociology course, and the association was negative when agents had only one course in Sociology."

Hypothesis 6(e). Speech and Journalism courses taken by agents were Agricultural Journalism, Elementary Photography, Introduction Public Relations, Oral Communication, Public Speaking, Drama and Interpretation, Parliamentary Law, Speech, Fundamentals of Speech, Persuasion, Agricultural Student Journalism, News Writing, Parliamentary Procedures, Magazine Article Writing, Surveying Broadcasting Technology, KSDB FM Part, Business Letter Writing, Essence of Public Speaking, Radio Workshop, Group technology and Conference Leading. There were 30 agents having a total of 175 credit hours in the above courses.

The analysis of data between the two groups of agents in Table XIII shows that the fifteen more effective agents had a total of 98 credit hours in Speech and Journalism courses with a range of 2-12 hours. Their mean was 6.5 credit hours. In comparison, the fifteen less effective agents had a total of 77 credit hours with a range of 2-8 hours. The mean was 5.1 hours. This group comparison shows that there were recognizable differences between total hours, the range, and of special importance was the difference between the mean credit hours. The more effective group averaged more than two courses, while the less effective group averaged less than two courses. To facilitate further analysis and to calculate the coefficient of association between effectiveness and these courses, the data were dichotomized on bases of: (1) Mean

credit hours of all thirty agents who had credits in Speech and Journalism courses; and (2) number of courses as exhibited by the means of each group--1-2 and 3-1 courses dichotomy.

Table XXI shows the distribution of agents according to the first dichotomy of mean credit hours of all agents. Their mean was 5.8 credit hours. Ten of the fifteen more effective agents were above and five were below this mean. In comparison eight of the fifteen less effective agents were above and seven were below the mean credit hours of all agents who had credits in Speech and Journalism courses. The coefficient of association was +.27. This was a low positive association between effectiveness and Speech and Journalism courses.

TABLE XXI

DISTRIBUTION OF THE 30 COUNTY EXTENSION AGENTS EMPLOYED IN KANSAS BETWEEN JULY 1, 1958 AND JUNE 30, 1963 BY THE MEAN CREDIT HOURS IN SPEECH AND JOURNALISM COURSES AND EFFECTIVENESS

Speech and Journalism courses	Effectiveness of agents		
	Bottom 1/3rd No.	Top 1/3rd No.	Total No.
Agents above the mean of 5.8 credit hours	8	10	18
Agents below the mean of 5.8 credit hours	7	5	12
Totals	15	15	30

$$Q = +.27$$

Table XXII shows the distribution of agents according to the second dichotomy of the number of courses agents had in Speech and Journalism. Seven of the fifteen more effective agents had credits in 3-4 courses, and eight had credits in 1-2 courses. In comparison, two of the fifteen less effective agents had credits in 3-4 courses, and thirteen had credits in 1-2 courses. The coefficient of association was $+ .70$. This was a high positive association between effectiveness and three or more Speech and Journalism courses.

TABLE XXII

DISTRIBUTION OF THE 30 COUNTY EXTENSION AGENTS EMPLOYED IN
KANSAS BETWEEN JULY 1, 1958 AND JUNE 30, 1963 BY
NUMBER OF COURSES IN SPEECH AND JOURNALISM
AND EFFECTIVENESS

Speech and Journalism courses	Effectiveness of agents		
	Bottom 1/3rd No.	Top 1/3rd No.	Total No.
3-4 courses in Speech and Journalism	2	7	9
1-2 courses in Speech and Journalism	13	8	21
Totals	15	15	30

$$Q = +.70$$

Both $+ .27$ and $+ .70$ coefficients of association were above the non-important set limit of $+ .16$ "Q" value. Considering the above, the researcher decided to reject the null hypothesis of no important association between effectiveness and Speech and Journalism courses. The analysis showed that there was an important association between these two attributes and the association was even higher when agents had credits in more than two Speech and Journalism courses.

Hypothesis 6(f). Humanity courses taken by agents were History of American Government, History, History of American Frontier, Modern Civilization, American Government, History of England, American History, Oklahoma History, Current History, Introduction Humanities I, Introduction Humanities II, Civilization I, Civilization II, American History and Government, World Civilization, Books Men 1, Books Men 2, American History Survey, and American Federal Government. There were twenty-six agents who had a total of 166 credit hours in the above Humanity courses.

The analysis of data between the two groups of agents, as in Table XIII, shows that the less effective group had a total of eighty-seven credit hours in Humanity courses, with a range of 4-8 hours. The mean was 6.2 credit hours. In comparison the more effective group had a total of seventy-nine credit hours with a range of 3-11 hours. The mean was 6.5 credit hours. This group comparison shows that there were some differences between the total hours, the range, and the mean of each group of agents. To facilitate further analysis and to calculate the coefficient of association between effectiveness and Humanity courses, the data were

dichotomized on bases of: (1) Those agents who had credits and those agents who had no credits; and (2) mean credit hours of those agents who had credits in Humanity courses--number of agents below and above mean dichotomy.

Table XXIII shows the distribution of agents according to the first dichotomy. Fourteen of the fifteen less effective agents had credits and one had no credits in Humanities, while twelve of the fifteen more effective agents had credits and three had no credits in Humanity courses. The coefficient of association was $-.55$. This was a moderate negative association between effectiveness and Humanity courses.

TABLE XXIII

DISTRIBUTION OF THE 30 COUNTY EXTENSION AGENTS EMPLOYED IN
KANSAS BETWEEN JULY 1, 1958 AND JUNE 30, 1963 BY
HUMANITY COURSES AND EFFECTIVENESS

Humanity courses	Effectiveness of agents		
	Bottom 1/3rd No.	Top 1/3rd No.	Total No.
Agents who had credits in Humanity courses	14	12	26
Agents who had no credits in Humanity courses	1	3	4
Totals	15	15	30

$$Q = -.55$$

Table XXIV shows the distribution of agents according to the second dichotomy of mean credit hours of those agents who had credits in Humanities. Their mean was 6.3 credit hours. This mean actually discriminated the agents on bases of two courses, and more than two courses (three courses and up) in Humanities. Six of the fourteen less effective agents were above and eight were below the mean. In comparison six of the twelve more effective agents who had credits in Humanities were above and six were below the mean credit hours. The coefficient of association was $+.14$. This was a very low positive association between effectiveness and more than two Humanity courses.

TABLE XXIV

DISTRIBUTION OF THE 26 COUNTY EXTENSION AGENTS EMPLOYED IN
KANSAS BETWEEN JULY 1, 1958 AND JUNE 30, 1963 BY
THE MEAN CREDIT HOURS IN HUMANITY COURSES
AND EFFECTIVENESS

Humanity courses	Effectiveness of agents		
	Bottom 1/3rd No.	Top 1/3rd No.	Total No.
Agents above the mean of 6.3 credit hours	6	6	12
Agents below the mean of 6.3 credit hours	8	6	14
Totals	14	12	26

$$Q = +.14$$

The "Q" value of $-.55$ between the two attributes, according to the first dichotomy of, courses and no courses, was above the non-important set limit of $\pm .16$ "Q" value. Hence, there was an important negative association between effectiveness and Humanity courses. The "Q" value of $+.14$, according to the second dichotomy of above and below the mean credit hours, was below the set limit of $\pm .16$ "Q" value. Thus, this association was not important, but the direction of association suggests some kind of underlying salient cause. Never-the-less the researcher decided to reject the null hypothesis of no important association between effectiveness and Humanity courses.

A summary, conclusions and recommendations related to the total study are presented in Chapter IV.

CHAPTER IV

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

The purpose of this study was to identify and explain some of the background characteristics, college education and other factors which were associated with the effectiveness of county Extension agents in Kansas.

The objective was to determine if there were important associations between the county agent's effectiveness on the job and:

1. Tenure in Extension.
2. Age.
3. Academic major field of study at college.
4. Previous job experiences in:
 - a. Teaching Vocational Agriculture, Extension Service and Sales work.
 - b. The U. S. Army and National Guard.
 - c. Total months of all previous job experiences.
5. College undergraduate grade point average.
6. The subject matter credit hours earned at college in:
 - a. Education courses.
 - b. Extension Education courses.
 - c. Psychology courses.
 - d. Sociology courses.

e. Speech and Journalism courses.

f. Humanity courses.

The population of this study was the fifteen more effective and the fifteen less effective county Extension agents who had a minimum service of twelve months between July 1, 1958 and June 30, 1963 in the Kansas Cooperative Extension Service. Home economic agents were not included in this study.

The agents' effectiveness was determined by a previous study conducted by W. E. Ringler, the Assistant Director of the Kansas Extension Service in cooperation with the Federal Extension Service. The measures or criteria used in determining the effectiveness of agents were the correlations of: (1) scores, obtained from the administration of the Missouri County Agent Inventory test; and (2) ratings, obtained from a panel of three administrators assisted by the immediate supervisor (district agent) of each agent. The researcher in his study used only those agents who had a perfect correlation between their scores and ratings.

The data related to the background characteristics, college education and other factors were collected and tabulated from records in the Kansas State Extension Office.

The methods used in the analysis of data were: Group comparisons by arithmetic means, statistical median and range; and Yule's "Q" to determine the degree and the direction of associations between attributes under study. Statistical tests were not used to determine the significance of these associations. Instead an arbitrary "Q" value of $\pm .16$ was used as a

guide to reject or accept the hypotheses. The data were dichotomized sometimes by the mean and sometimes by the median, depending on the nature of the data, and by the effectiveness of agents. Any association at or below $\pm .16$ "Q" value was not considered a strong enough association to reject the null hypotheses.

Summary of Findings and Conclusions

The summary of findings and conclusions is presented in relation to the hypotheses that were established.

Hypothesis 1. There is no important association between the county agent's effectiveness on the job and tenure in the Kansas Extension Service.

For the purpose of rejecting or accepting this hypothesis, tenure on the job for each agent was determined and tabulated. It was found that the more effective group of agents had a range of 13-58 months, and the less effective agents had a range of 12-57 months of tenure on the job. Their difference in range was zero. The average or mean tenure for the more effective group of agents was 36.2 months, and for the less effective group, 36.3 months. The difference in mean was .1 months. The total months of tenure for the more effective group was 544 months, and for the less effective group, 545 months. The coefficient of association between effectiveness and tenure on the job was $-.13$. This was a very low negative association. Considering the above findings, the null hypothesis was accepted. That is, there was no important association between effectiveness and tenure on the job.

In general, one would expect the more effective agents to have more tenure on the job than the less effective agents. However, there was no difference between the two groups of agents. This does not necessarily mean that experience on the job does not contribute to the effectiveness of county Extension agents. The only conclusion that can be drawn is that there must be other factors than tenure which may have contributed to the effectiveness of these agents.

Hypothesis 2. There is no important association between age and the effectiveness of county Extension agents in Kansas.

For the purpose of accepting or rejecting this hypothesis, each agents' age, at the time of appointment, was calculated to the nearest month. The median age for all agents was 311.5 months (25.9 years). The more effective agents had a median age of 330 months (27.5 years), with a range of 274-396 months (22.9-33 years) with one exception of 583 months (48.8 years). The less effective agents had a median age of 282 months (23.5 years) with a range of 258-373 months (21.5-31 years). The coefficient of association was +.60. This was a moderate positive association between age and the effectiveness of agents. In view of the above findings the hypothesis was rejected.

It can be concluded that older agents were more effective than the younger agents, and since both groups of agents practically had a matched tenure, their effectiveness was not necessarily due to tenure on the job. Probably another conclusion would be that agents above twenty-six years of age have considerable potential in Extension work.

Hypothesis 3. There is no important association between academic major field of study in college and effectiveness of county Extension agents in Kansas.

For the purpose of accepting or rejecting this hypothesis each agents' college transcript was studied and major fields of study were tabulated. It was found that both groups of agents had similar technical major fields of study. The coefficient of association between technical major fields of study and effectiveness was $+.15$. It was also found that seven of the fifteen more effective agents had M.S. degrees and, of these, two had some credit hours beyond the Masters. The remaining eight agents had no M.S. degree, but five had 3-21 hours credits beyond B.S. degree. Finally, and probably most important, seven of the fifteen more effective agents had such majors as Agricultural Education, Vocational Education and Extension Education. Only one of the fifteen less effective agents had majored in Agricultural Education. The coefficient of association between effectiveness and major field of study (Agricultural Education, Vocational Education, Extension Education) was $+.84$. This was considered a high positive association. The hypothesis was rejected. In other words there was an important association between effectiveness and major field of study at college.

As a conclusion, both technical subject matter and Education were essential elements of effectiveness. Also an agent's desire or interest in an advanced degree, or having a M.S. degree was another important desirable characteristic of effectiveness.

Hypothesis 4. There is no important association between the effectiveness of county Extension agents in Kansas and previous job experiences in:

- (a) Teaching Vocational Agriculture, Extension Service and Sales work.
- (b) The U. S. Army and National Guard.
- (c) Total months of all previous job experiences.

To determine if the above had any contribution to the effectiveness of agents, their application forms and other documents in the Kansas Extension Office were studied and the data tabulated. The findings were as follows:

1. Seven of the fifteen more effective agents had previous experience in Vocational Agriculture, Extension Service and Sales work. Only one of the fifteen less effective group of agents had Sales work experience. The coefficient of association between these experiences and effectiveness of agents was $+ .84$. This was considered a high positive association, and the (a) part of the null hypothesis 1 was rejected. In other words there was an important association between effectiveness of the agents and their previous experience in teaching Vocational Agriculture, Extension Service and Sales work.

2. Thirteen of the fifteen more effective agents had served in the U.S. Army and National Guard. Only seven of the fifteen less effective group of agents had such services. The coefficient of association between effectiveness and services in the U.S. Army and National

Guard was $+ .76$. This was considered a high positive association and the (b) part of the null hypothesis H_1 was rejected.

3. The total months of all previous job experiences were calculated to the nearest month. The more effective group of agents had a total of 1005 months, a range of 14-265 and a median of 54 months previous job experiences. The less effective group of agents had a total of 477 months, a range of 7-87 months and a median of 18 months of previous job experience. The coefficient of association between the effectiveness and previous job experiences of the agents was $+ .60$. This was considered a moderate positive association, and the (c) part of the null hypothesis H_1 was rejected. That is to say that there was an important association between the effectiveness and the total months of previous job experience of agents.

Considering the above findings it can be concluded that experience in the Army and National Guard, Sales work, Extension Service and especially in teaching Vocational Agriculture are factors which may contribute to the effectiveness of county Extension agents. Another important factor may be the total months of previous job experiences gained by the agents in various jobs.

Hypothesis 5. There is no important association between the effectiveness of county Extension agents and their college undergraduate grade-point-average.

For the purpose of accepting or rejecting this hypothesis, each agent's undergraduate college transcript was studied and their

grade-point-averages (G.P.A.) were calculated to the first decimal point. The calculations were based on a four-point grading system. The more effective group of agents had a median of 2.6 G.P.A. with a range of 2.1-3.0. The less effective group of agents had a median of 2.1 G.P.A. with a range of 2.1-2.9. The coefficient of association between effectiveness and the undergraduate grade-point-average of agents was +.39. This was considered a moderate positive association. Thus, the null hypothesis was rejected. There was an important association between effectiveness and the undergraduate G.P.A. of agents, though this association does not seem to be very strong.

Undergraduate G.P.A. of agents may be considered as an index of effectiveness, but it is only one of the characteristics or factors and only limited emphasis should be placed on this index.

Hypothesis 6. There is no important association between the effectiveness of county Extension agents in Kansas and the subject matter credit hours earned in:

- (a) Education courses
- (b) Extension Education courses
- (c) Psychology courses
- (d) Sociology courses
- (e) Speech & Journalism courses
- (f) Humanity courses.

The agents' college transcripts were studied and data tabulated for the purpose of rejecting or accepting the above hypothesis. The

findings were as follows:

(a) Education courses. Eight of the fifteen more effective agents had a total of 115 credit hours of Education courses, ranging from 3-24 credit hours. Their mean was 14.3 hours. Only two of the fifteen less effective group of agents had a total of fifteen credit hours of Education courses. One had three and the other had twelve credit hours. Their mean was 7.5 hours. The coefficient of association according to the dichotomy of those who had Education courses and those who had no such courses was +.70. This was considered a high positive association between effectiveness and Education courses. The coefficient of association according to the second dichotomy of mean credit hours (13) of all agents who had credits in Education courses was +1.00. This was a perfect positive association between effectiveness of agents and three or more Education courses. Considering the above, the (a) part of the null hypothesis 6 was rejected. In other words there was an important association between effectiveness and Education courses taken by the agents at college and the association was stronger when agents had more than three courses in Education.

As a conclusion three or more courses in Education may be desirable for agents working in Extension.

(b) Extension Education courses. Nine of the fifteen more effective agents had a total of 39 credit hours Extension Education courses, ranging from 2-9 hours. Their mean was 4.3 hours. Only five agents of the fifteen less effective group had a total of 17 credit hours Extension Education

courses with a range of 2-6 credit hours. Their mean was 3.1 hours. The coefficient of association, according to the dichotomy of those who had Extension Education courses and those who had no such courses was $+.50$. This was considered a moderate positive association. The coefficient of association according to the dichotomy of mean credit hours of all agents who had credits in Extension Education courses was $+.52$. Both of these degrees of association between effectiveness and Extension Education courses were important and the (b) part of the null hypothesis 6 was rejected.

To conclude, the number of Extension Education courses may not make much difference in effectiveness, as long as agents had some credits in this field. In other words agents who had two courses in Extension Education may not be any more effective than those agents having only one course, because differences between the two "Q" values were negligible.

(c) Psychology courses. Seven of the fifteen more effective agents had a total of 50 credit hours of Psychology courses, ranging from 3-9 hours. Their mean was 7.1 credit hours. From the fifteen less effective group, six agents had a total of 27 credit hours of Psychology courses with a range of 3-9 hours. Their mean was 4.5 credit hours. The coefficient of association, according to the dichotomy of those who had Psychology courses and those who had no such courses was $+.13$. This was considered a low positive association. The coefficient of association, according to the dichotomy of mean credit hours of all those agents who had credits in Psychology courses was $+.66$. This was considered to be a moderate

positive association, and the researcher decided to reject the (c) part of the null hypothesis 6 by stating that "there was an important positive association between the effectiveness of agents and more than one Psychology course." The degree of association according to the first dichotomy did not discriminate agents by the number of courses, but the second dichotomy of 5.9 mean credit hours, actually discriminated the agents by one and more than one Psychology course.

As a conclusion, one course in Psychology may not have an important contribution to the effectiveness of agents in their jobs, but two or more courses may have had a considerable contribution to the effectiveness of these agents.

(d) Sociology courses. Seven of the fifteen more effective agents had a total of 38 credit hours of Sociology courses, ranging from 3-11 hours. Their mean was 5.4 credit hours. From the fifteen more effective group, ten agents had a total of 33 credit hours of Sociology courses with a range of 3-6 hours. Their mean was 3.3 credit hours. The coefficient of association, according to the dichotomy of those who had Sociology courses and those who had no such courses was $-.39$. This was considered a moderate negative association. The coefficient of association according to the dichotomy of mean credit hours of all those agents who had credits in Sociology courses was $+.74$. This was considered a high positive association. In view of the above findings the researcher decided to reject the (d) part of the null hypothesis 6 by stating that: (1) There was an important negative association between the effectiveness of agents and one

Sociology course; and (2) there was an important positive association between the effectiveness of agents and two or more Sociology courses.

As a conclusion one course in Sociology indicated a negative relationship to the effectiveness of agents. But two or more courses in Sociology showed an important positive relationship.

(e) Speech and Journalism courses. The fifteen more effective agents had a total of 98 credit hours of Speech and Journalism courses, ranging from 2-12 hours. Their mean was 6.5 credit hours. The fifteen less effective agents had a total of 77 credit hours of Speech and Journalism courses, ranging from 2-8 credit hours. Their mean was 5.1 credit hours. The coefficient of association, according to the dichotomy of mean credit hours of all agents was +.27. This was considered a low positive association. The coefficient of association, according to the dichotomy of 1-2 and 3-4 courses in Speech and Journalism was +.70. This was considered a high positive association between effectiveness of agents and three or more Speech and Journalism courses. Both "Q" values were considerable and thus the (e) part of the null hypothesis 6 was rejected.

There was an important association between the effectiveness of agents and Speech and Journalism courses, and the strength of this association, between these two attributes was stronger when the agent had more than two Speech and Journalism courses. In short, Speech and Journalism courses may be important factors contributing to the effectiveness of agents.

(f) Humanity courses. Fourteen of the fifteen less effective agents

had a total of 87 credit hours of Humanity courses, ranging from 4-8 hours. Their mean was 6.2 credit hours. From the fifteen more effective group, twelve agents had a total of 77 credit hours of Humanity courses with a range of 3-11 hours. Their mean was 6.5 credit hours. The coefficient of association, according to the dichotomy of those agents who had Humanity courses and those who had no such courses was $-.55$. This was considered a moderate negative association. The coefficient of association, according to the dichotomy of mean credit hours of all those agents who had credits in Humanity courses was $+.14$. This was considered a very low positive association. Considering the above findings, the researcher decided to reject the (f) part of the null hypothesis 6 by stating that, "there was an important negative association between effectiveness of the agents and Humanity courses." Though the association between effectiveness of agents and more than two Humanity courses was not important, it will be wise to consider the altered direction of this association before any sensible conclusion can be made. Probably the safest conclusion would be that Humanity courses may not contribute materially to the effectiveness of these county Extension agents in the state of Kansas.

Summary of Associations

The coefficient of associations between the various background characteristics and effectiveness of agents are presented in a descending order according to the strength or degree of associations as follows:

1. There was a perfect positive association between the effectiveness of agents and:

(a) M.S. degree or agents desire toward an advanced degree. ($Q = +1.00$)

(b) 13 hours or more Education courses. ($Q = +1.00$)

2. There was a high positive association between the effectiveness of agents and:

(a) Previous job experience in teaching Vocational Agriculture, Extension Service and Sales work. ($Q = +.84$)

(b) Major field of study in Agricultural Education, Vocational Education and Extension Education. ($Q = +.84$)

(c) Previous job experience in the U.S. Army and National Guard. ($Q = +.76$)

(d) 4.1 hours or more (more than one) Sociology courses. ($Q = +.74$)

(e) Education courses (courses and no courses dichotomy). ($Q = +.70$)

(f) More than two (3-4) Speech and Journalism courses. ($Q = +.70$)

3. There was a moderate positive association between the effectiveness of agents and:

(a) 5.9 hours or more (more than one) Psychology courses. ($Q = +.66$)

- (b) 43 months or more total miscellaneous previous job experiences. ($Q = +.60$)
- (c) 25.9 years of age and over. ($Q = +.60$)
- (d) 1 hour and more (more than one) Extension Education courses. ($Q = +.52$)
- (e) Extension Education courses (courses and no courses dichotomy). ($Q = +.50$)
- (f) 2.5 undergraduate grade-point-average and above. ($Q = +.39$)

4. There was a moderate negative association between the effectiveness of agents and:

- (a) Humanity courses (courses and no courses dichotomy). ($Q = -.55$)
- (b) Sociology courses (courses and no courses dichotomy). ($Q = -.39$)

5. There was a low positive association between the effectiveness of agents and:

- (a) 5.8 hours or more (two or more) Speech and Journalism courses. ($Q = +.24$)

6. There was a very low positive association between the effectiveness of agents and:

- (a) Technical (Agronomy, Dairy and Animal Husbandry and Horticulture) subject matter major field of study. ($Q = +.15$)

(b) 6.3 hours or more (more than two) Humanity courses.

(Q = +.14)

(c) Psychology courses (courses and no courses dichotomy).

(Q = +.13)

7. There was a very low negative association between the effectiveness of agents and tenure on the job. (Q = -.13)

8. There was a very high positive association between the:

(a) Age of agents and Service in the U. S. Army and National Guard. (Q = 1.00)

(b) Age of agents and the median months of total previous job experiences. (Q = +.95)

Recommendations

Use of results. The study was not designed to make "inductive" use of results. However the researcher feels that administrators of the Kansas Extension Service, when selecting county Extension agents, should consider the associations that existed between the effectiveness of agents and: (1) M.S. degree or agent's desire toward an advanced degree; (2) number of Education, Speech and Journalism courses, more than one Sociology and Psychology courses; (3) previous job experience in teaching Vocational Agriculture, Extension Service, Sales work, and U.S. Army or National Guard; (4) Agricultural Education, Vocational Education and Extension Education majors (the agents had similar technical agricultural subject matter background); (5) age of agents; and (6) undergraduate grade-point-average.

Consideration of the above factors, at the time of selecting agents, may improve the Staffing Process of the Kansas Extension Service.

Further research. It would be valuable to develop a study designed to hold some of the academic and other background characteristics of agents, constant, and check other factors that are believed to be desirable for the effectiveness or success of county Extension agents in Kansas.

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APPENDICES

APPENDIX A

Federal Extension Service
USDA

Study Plan for Validation of the
Missouri County Agent Inventory.

1. Title: Validation of an Aptitude Test in the Selection of County Agricultural Agents.
2. Purpose and Significance: Agricultural extension work is carried on by over 6,500 county agricultural agents. The average turnover per year is about 15% of nearly 1,000 new agents.

The selection of effective county agents is basic to the conduct of extension work. They are the extension personnel who have continuous and direct contact with the people. Depending upon them, extension work succeeds or fails.

Using funds allocated to the Cooperative Extension Service by the Office of Naval Research, nine studies were conducted in four States -- Michigan, Missouri, New York, and Texas (1949-52) -- to determine the differential characteristics of the more effective and less effective county agents.

One of the Missouri studies developed an aptitude test, the Missouri County Agent Inventory, for use in selecting county agents. On the basis of the rating method used in Missouri, the Inventory did a very good job of selecting the better agents. As aptitude tests go the predictive value was exceedingly high.

The significance of the problem of selecting the most effective agents and the fact that the Missouri Inventory has such a high predictive value of selecting agents in Missouri warrant a further study to validate it on a national basis.

3. Scope: The study will be conducted in 10-15 States ranging in size of number of personnel and in various extension regions of the country.
4. Research Design:
 - a. Administration of the Inventory: The Inventory will be administered to all promising applicants as they apply for county agricultural positions (including also 4-H Club agents

who may later become county agricultural agents) in the participating States. The Inventory will not be scored but will be sealed and filed away so that these results cannot influence later judgments of these individuals.

- b. Judging Effectiveness of Agents: A system of judging the effectiveness of county agents will be devised in each State or the present system revised if necessary, as the case may be. This must be given careful thought because it is the criterion of effective agents and against which the Inventory is validated. Each State will have its own judging system based on its own conditions and standards of extension work. The ultimate use of the Inventory in an individual State will depend upon how well the Inventory will predict the effectiveness of the agents employed in that State.

At the end of the first two years of service, all county agents on the job at the time will be judged as to effectiveness. The same will be done at the end of the third, fourth and fifth years. By the end of the five-year period the Inventory will have been given and effectiveness ratings made on a sufficient number of new agents.

- c. Comparison of the Results: At the end of the five years the Inventories will be scored and effectiveness ratings predicted. The actual ratings and the predicted ratings of the agents who had taken the Inventory and who had been on the job at least two years will be compared to determine how closely they correspond. The results will be set up in tabular form to show the degree to which the actual and predicted ratings are identical.

5. Supplemental Questionnaire: The Michigan and New York studies uncovered certain differential characteristics of more effective and less effective agents. These will be formulated into a Supplemental Questionnaire to be given to promising applicants at the time the Inventory is given. This aspect of the study is designed to include other factors which may increase the predictive value of the study.
6. Further Research: It is conceivable that the length of the Inventory can be substantially shortened with a minimum loss in predictive value. It is also conceivable that the Supplemental Questionnaire will yield questions having considerable contribution to the prediction of county agent effectiveness.

Therefore, further research will be conducted in the Federal Extension Service from the above data obtained by the State Extension Services to test the predictive power of each question in the Inventory and in the Supplemental Questionnaire when used on a broader base. The statistical procedure used will be similar to the one used in constructing the Inventory in Missouri.

Questions with the highest predictive power will be selected to shorten the Inventory but still maintain the predictive value of the Inventory.

7. Responsibilities: This will be a cooperative study between the participating State Extension Services and the Division of Extension Research and Training of the Federal Extension Service. Each State will conduct the study as outlined in Item 4 above. The Division serves as consultant to each State in formulating and conducting the study and in coordinating it among the States.

The Division will take leadership in developing the Supplemental Questionnaire (Item 5) and will furnish each State with sufficient copies. It will also be responsible for the validation analysis given in Item 6.

8. Organization: Each State should have a committee to advise on the Study and participate in determining the system that the State will use in judging the effectiveness of county agricultural agents. It should include State personnel engaged in the supervision of county agents.

Each State should have a person assigned the responsibility for carrying out the study in the State. That person will work closely with the person in the Division of Extension Research and Training who has the responsibility for the study.

9. Use of Findings: If the Inventory proves to be valid in other States, it will help to select agents who will be more effective in carrying on extension work, increase the efficiency of extension and create greater satisfaction among the people of the county. It is also not too much to hope that better agents will help to reduce the timelag between research and practice. The Extension Service is no better than its county agents who carry on the work with the people.

It must be made clear, however, that agents would not be selected automatically from the scores on the Inventory. The Inventory results are one of the factors a State director and staff would consider in the selection of agents. Added to other selection factors the Inventory would provide a more satisfactory basis of selection.

It is important to note that most of the questions in the Inventory have nothing to do with Extension work. Hence a person cannot guess how to answer a question in order to get a higher score and "beat" the test. Research on the Inventory has shown that persons cannot force a higher score even when they try to do so.

Procedure and Specific Jobs to be Done
by a State Extension Service.

1. Appoint a study committee to guide the study and develop and use a system for judging the effectiveness of county agents.

Appoint a person as the study leader to carry on the study.

2. Obtain copies of Missouri County Agent Inventory and answer sheets from

Dr. Charles Lively
Department of Rural Sociology
University of Missouri
Columbia, Missouri

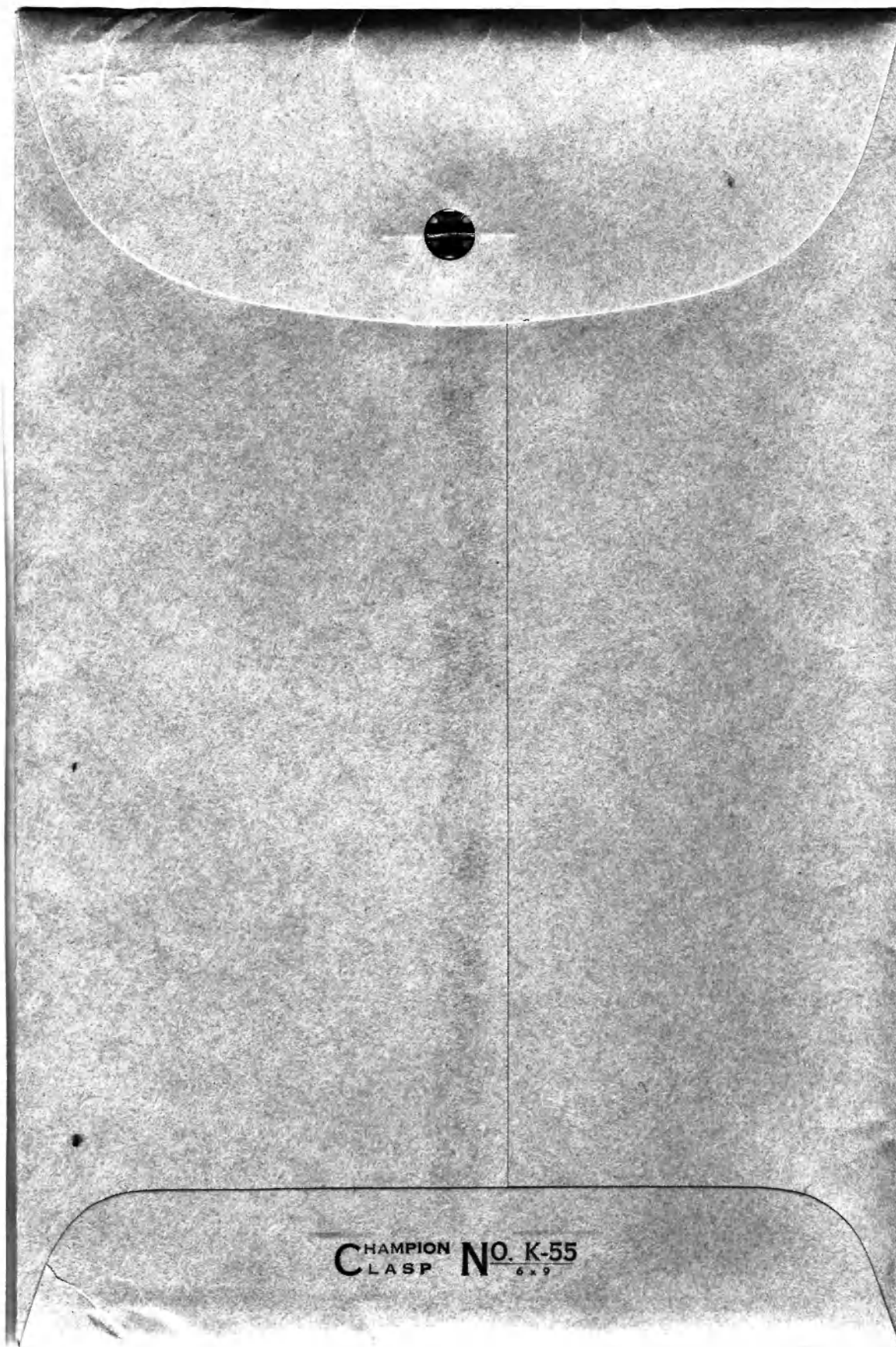
These can be had for 5-10¢ apiece. Since the Inventory can be used over and over you will need only possibly 10-15 copies. The applicants do not mark the Inventory. They place their answers on answer sheets. You will need an answer sheet for each promising applicant.

3. Give the Inventory and Supplemental Questionnaire to promising applicants for county agricultural agent positions. Care should be taken that answering the Inventory and the Supplemental Questionnaire should be the applicant's own work. Begin to give the Inventory and Supplemental Questionnaire in the fall of 1956.
4. Seal the Inventory and Questionnaire in an envelope and place name of applicant on envelope. Do not score the Inventory nor Questionnaire. No one should be aware of the applicants' answers so that they cannot influence the ratings made later. Provide a place for filing the above envelopes.
5. The committee would review the system of judging the effectiveness of county agricultural agents and work out a system that is most adaptable and practical for the State. Many States have such systems whose forms and procedures can be reviewed.

6. At the end of 2, 3, 4, and 5-years all county agents will be judged as to effectiveness by State supervisors and others who are well acquainted with each agent's work, using the above system.
7. The Missouri Inventory will then be scored in the State using the scoring key obtained from Missouri.
8. A predicted rating will be made for each agent from these scores using the Missouri formula.
9. Comparisons will be made between the predicted rating and the actual rating to determine the accuracy of the Inventory as an aptitude test in the selection of county agricultural agents. A cross-hatch table showing the number of agents in each rating will be prepared. A coefficient of correlation, a measure of the degree to which the actual rating and the predicted rating correspond, will be prepared.

APPENDIX B

The Missouri County Agent Inventory



THE MISSOURI COUNTY AGENT *INVENTORY*

by

Ivan Nye

Instructions for Use

The MISSOURI COUNTY AGENT INVENTORY is constructed to assist farm youth in making their vocational choice and to assist agricultural extension administrators to choose men for county agent positions who will become successful county agents.

This inventory is not a test of either skill or intelligence. Your answers will indicate only whether your background, school experiences, vocational interests, personality, and attitudes are similar or different from successful county agents.

Your answers will be held entirely confidential. Feel free to ask questions about this inventory before you begin.

Do not begin until you are told to do so.

University of Missouri
Department of Rural Sociology, Agricultural Experiment Station
and
Agricultural Extension Service,
Cooperating

VOCATIONAL INTEREST*

Section I -- OCCUPATIONS. Indicate after each occupation listed below whether you would like that kind of work or not. Disregard considerations of salary, social standing, future advancement, etc. Consider only whether or not you would like to do what is involved in the occupation. You are not asked whether you would take up the occupation permanently, but merely whether or not you would enjoy that kind of work, regardless of any necessary skills, abilities, or training which you may or may not possess.

Use separate answer sheet which has been given to you.

Blacken the space under L if you like that kind of work.

Blacken the space under I if you are indifferent to that kind of work.

Blacken the space under D if you dislike that kind of work.

Work rapidly. Your first impressions are desired here. Answer all the items. Many of the seemingly trivial and irrelevant items are very useful in diagnosing your real attitude.

- | | | | |
|---------------------------------|-------|------------------------------------|-------|
| 1. Actor (not movie) | L I D | 28. Judge | L I D |
| 2. Architect | L I D | 29. Labor Arbitrator | L I D |
| 3. Army Officer | L I D | 30. Landscape Gardener | L I D |
| 4. Athletic Director | L I D | 31. Lawyer, Criminal | L I D |
| 5. Author of Novel | L I D | 32. Lawyer, Corporation | L I D |
| 6. Auto Salesman | L I D | 33. Machinist | L I D |
| 7. Auto Racer | L I D | 34. Marine Engineer | L I D |
| 8. Auto Repairman | L I D | 35. Mining Superintendent | L I D |
| 9. Aviator | L I D | 36. Music Teacher | L I D |
| 10. Bank Teller | L I D | 37. Orchestra Conductor | L I D |
| 11. Building Contractor | L I D | 38. Photo Engraver | L I D |
| 12. Carpenter | L I D | 39. Physician | L I D |
| 13. Cashier in Bank | L I D | 40. Playground Director | L I D |
| 14. Certified Public Accountant | L I D | 41. Poet | L I D |
| 15. Civil Engineer | L I D | 42. Politician | L I D |
| 16. Dentist | L I D | 43. Railway Conductor | L I D |
| 17. Editor | L I D | 44. Real Estate Salesman | L I D |
| 18. Electrical Engineer | L I D | 45. Reporter, General | L I D |
| 19. Explorer | L I D | 46. Sculptor | L I D |
| 20. Factory Manager | L I D | 47. Secretary, Chamber of Commerce | L I D |
| 21. Factory Worker | L I D | 48. Secret Service Man | L I D |
| 22. Farmer | L I D | 49. Ship Officer | L I D |
| 23. Floorwalker | L I D | 50. Surgeon | L I D |
| 24. Florist | L I D | 51. Toolmaker | L I D |
| 25. Foreign Correspondent | L I D | 52. Traveling Salesman | L I D |
| 26. Governor of a State | L I D | 53. Typist | L I D |
| 27. Interpreter | L I D | 54. Wholesaler | L I D |

Section II -- SCHOOL SUBJECTS. Indicate as in Section I your interest when in school.

- | | | | | | |
|----------------|-------|---------------------|-------|---------------------|-------|
| 55. Algebra | L I D | 62. English Com- | | 68. Physics | L I D |
| 56. Arithmetic | L I D | position | L I D | 69. Psychology | L I D |
| 57. Art | L I D | 63. Geology | L I D | 70. Physiology | L I D |
| 58. Botany | L I D | 64. History | L I D | 71. Public Speaking | L I D |
| 59. Chemistry | L I D | 65. Literature | L I D | 72. Sociology | L I D |
| 60. Civics | L I D | 66. Mathematics | L I D | 73. Spelling | L I D |
| 61. Dramatics | L I D | 67. Manual Training | L I D | | |

Section III -- AMUSEMENTS. Indicate in the same manner as in Section I whether you like the following or not. If in doubt, consider your most frequent attitude. Work rapidly. Do not think over various possibilities. Record your first impression.

* Individual items reproduced from the Vocational Interest Blank for Men, by Edward K. Strong, Jr., published by the Stanford University Press, with permission of author and publisher.

74. Golf	L I D	82. Pet canaries	L I D
75. Tennis	L I D	83. Pet monkeys	L I D
76. Boxing	L I D	84. Snakes	L I D
77. Poker	L I D	85. Poetry	L I D
78. Observing birds (nature study)	L I D	86. Detective stories	L I D
79. "Rough house" initiations	L I D	87. "American Magazine"	L I D
80. Full-dress affairs	L I D	88. Social problem movies	L I D
81. Vaudeville	L I D	89. Making a radio set	L I D

Section IV -- ACTIVITIES. Indicate your interests as in Section I.

90. Adjusting a carburetor	L I D	104. Pursuing bandits in sheriff's posse	L I D
91. Raising flowers and vegetables	L I D	105. Writing personal letters	L I D
92. Arguments	L I D	106. Writing reports	L I D
93. Interviewing clients	L I D	107. Looking at shop windows	L I D
94. Making a speech	L I D	108. Being pitted against another as in a political or athletic race	L I D
95. Organizing a play	L I D	109. Methodical work	L I D
96. Teaching children	L I D	110. Continually changing activities	L I D
97. Teaching adults	L I D	111. Developing business systems	L I D
98. Being called a nickname	L I D	112. Contributing to charities	L I D
99. Meeting and directing people	L I D	113. Living in the city	L I D
100. Taking responsibility	L I D	114. Climbing along edge of precipice	L I D
101. Meeting new situations	L I D	115. Looking at a collection of antique furniture	L I D
102. Adjusting difficulties of others	L I D		
103. Drilling soldiers	L I D		

Section V -- PECULIARITIES OF PEOPLE. Record your first impression. Do not think of various possibilities or of exceptional cases. "Let yourself go" and record the feeling that comes to mind as you read the item. Work rapidly.

116. Progressive people	L I D	128. People who get "rattled" easily	L I D
117. Optimists	L I D	129. Very old people	L I D
118. Pessimists	L I D	130. Cripples	L I D
119. People who assume leadership	L I D	131. Side-show freaks	L I D
120. People easily led	L I D	132. Fashionably dressed people	L I D
121. People who have made fortunes in business	L I D	133. Carelessly dressed people	L I D
122. Emotional people	L I D	134. People who don't believe in evolution	L I D
123. Thrifty people	L I D	135. Socialists	L I D
124. Spendthrifts	L I D	136. Bolsheviks	L I D
125. Talkative people	L I D	137. Independents in politics	L I D
126. Religious people	L I D	138. People who chew gum	L I D
127. Irreligious people	L I D		

Section VI -- ORDER OF PREFERENCE OF ACTIVITIES. Indicate which two of the following seven activities you would enjoy most by marking under number "1" on answer sheet; also indicate which two you would enjoy least by marking them under number "3" on answer sheet. Mark the remaining three activities under number "2."

1	2	3	
139. () () ()			Develop the theory of operation of a new machine, e.g., auto
140. () () ()			Operate (manipulate) the new machine
141. () () ()			Determine the cost of operation of the machine
142. () () ()			Supervise the manufacture of the machine
143. () () ()			Create a new artistic effect, i.e., improve the beauty of the auto
144. () () ()			Teach others the use of the machine
145. () () ()			Interest the public in the machine through public addresses

Indicate in the same way what you consider are the two most important factors affecting your work; also the two least important factors. Mark the remaining two items under number "2." Be sure

you have marked two items under "1," two items under "3," and two under "2."

- | | 1 | 2 | 3 | |
|------|-----|-----|-----|---|
| 146. | () | () | () | Salary received for work |
| 147. | () | () | () | Steadiness and permanence of work |
| 148. | () | () | () | Opportunity for promotion |
| 149. | () | () | () | Opportunity to make use of all one's knowledge and experience |
| 150. | () | () | () | Opportunity to understand just how one's superior expects work to be done |
| 151. | () | () | () | Freedom in working out one's own methods of doing the work |

Indicate in the same way the two positions you would most prefer to hold in club or society; also the two you least prefer to hold. Mark the remaining two in column 2.

- | | 1 | 2 | 3 | |
|------|-----|-----|-----|-----------------------------------|
| 152. | () | () | () | President of a Society or Club |
| 153. | () | () | () | Treasurer of a Society or Club |
| 154. | () | () | () | Chairman, Educational Committee |
| 155. | () | () | () | Chairman, Entertainment Committee |
| 156. | () | () | () | Chairman, Membership Committee |
| 157. | () | () | () | Chairman, Program Committee |

Section VII -- COMPARISON OF INTEREST BETWEEN TWO ITEMS. Indicate your choice of the following pairs by blackening in the first space on the answer sheet if you prefer the item to the left, in the second space if you like both equally well, and in the third space if you prefer the item to the right. Assume other things are equal except the two items to be compared. Work rapidly.

- | | L | E | R | |
|---|-----|-----|-----|---|
| 158. Policeman | () | () | () | Fireman (fights fire) |
| 159. Chauffeur | () | () | () | Chef |
| 160. Head waiter | () | () | () | Lighthouse tender |
| 161. House to house canvassing | () | () | () | Retail selling |
| 162. House to house canvassing | () | () | () | Gardening |
| 163. Repair auto | () | () | () | Drive auto |
| 164. Develop plans | () | () | () | Execute plans |
| 165. Persuade others | () | () | () | Order others |
| 166. Deal with things | () | () | () | Deal with people |
| 167. Plan for immediate future | () | () | () | Plan for five years ahead |
| 168. Activity which produces tangible returns | () | () | () | Activity which is enjoyed for its own sake |
| 169. Taking a chance | () | () | () | Playing safe |
| 170. Definite salary | () | () | () | Commission on what is done |
| 171. Work which interests you with modest income | () | () | () | Work which does not interest you with large income |
| 172. Work in a large corporation with little chance of becoming president until age of 55 | () | () | () | Work for self in small business |
| 173. Small pay, large opportunities to learn during next 5 years | () | () | () | Good pay, little opportunity to learn during next 5 years |
| 174. Work involving few details | () | () | () | Work involving many details |
| 175. Change from place to place | () | () | () | Working in one location |
| 176. Great variety of work | () | () | () | Similarity in work |
| 177. Present a report in writing | () | () | () | Present a report verbally |
| 178. Listening to a story | () | () | () | Telling a story |
| 179. Playing baseball | () | () | () | Watching baseball |
| 180. Nights spent at home | () | () | () | Nights away from home |
| 181. Reading a book | () | () | () | Going to movies |
| 182. Belonging to many societies | () | () | () | Belonging to few societies |
| 183. Few intimate friends | () | () | () | Many acquaintances |

Section VIII -- RATING OF PRESENT ABILITIES AND CHARACTERISTICS. Indicate on answer sheet what kind of a person you are right now and what you have done. Check in the first column ("Yes") if the item really describes you, in the third column ("No") if the item does not describe

you, and in the second column (?) if you are not sure. (Be frank in pointing out your weak points, for selection of a vocation must be made in terms of them as well as your strong points.)

	Yes	?	No
184. Usually start activities of my group	()	()	()
185. Usually drive myself steadily (do not work by fits and starts)	()	()	()
186. Usually get other people to do what I want done	()	()	()
187. Am quite sure of myself	()	()	()
188. Am always on time with my work	()	()	()
189. Have good judgment in appraising values	()	()	()
190. Put drive into the organization	()	()	()
191. Win confidence and loyalty	()	()	()
192. Smooth out tangles and disagreements between people	()	()	()
193. Discuss my ideals with others	()	()	()

Blacken in the first, second, or third column on answer sheet according as the first, second, or third statement in each item below applies to you.

	1	2	3
194. (1) Feelings easily hurt (2) Feelings hurt sometimes (3) Feelings rarely hurt	()	()	()
195. (1) Loan money to acquaintances (2) Loan only to certain people (3) Rarely loan money	()	()	()
196. (1) Best-liked friends are superior to me in ability (2) Equal in ability (3) Inferior in ability	()	()	()
197. (1) My advice sought by many (2) Sought by few (3) Practically never asked	()	()	()
198. (1) Frequently make wagers (2) Occasionally make wagers (3) Never make wagers	()	()	()
199. (1) Worry considerably about mistakes (2) Worry very little (3) Do not worry	()	()	()

BE SURE YOU HAVE NOT OMITTED ANY PART.

(Continue to next division.)

INDIVIDUAL CHARACTERISTICS

Below you will find some questions which are to be answered by marking "Yes," "U," or "No." Read each question in turn, think what your opinion or your behavior has usually been, and mark on the separate answer sheet the answer that best describes your behavior or opinion. Mark "U" only when you are unable to decide between the "Yes" and "No." Be sure to answer every question. There are no right answers to these questions except the answers that tell how you think or feel about them. Work rapidly; your first impression of the general situation is the desired answer.

200. Are most people you know well suited to the jobs they hold?	Yes	U	No
201. Do you prefer a supervisor who tells you clearly what to do rather than one who expects you to decide what to do next?	Yes	U	No
202. Are you inclined to be thinking about yourself much of the time?	Yes	U	No
203. Do you think that most people who help others secretly dislike going to the trouble to do so?	Yes	U	No
204. Do you frequently seek the advice of other people?	Yes	U	No
205. When you are criticized does it disturb you badly?	Yes	U	No
206. Do you find that very few workmen nowadays do a job as it should be done?	Yes	U	No
207. Have you found that, in general, people higher up tend to dodge the dirty work, leaving it for others to do?	Yes	U	No
208. Are you annoyed when people tell you how you should do a thing?	Yes	U	No
209. Are you ever bothered by the idea that someone is reading your thoughts?	Yes	U	No
210. Do you have days in which it seems that everything goes wrong?	Yes	U	No
211. Generally speaking, do you think the head of a firm should have risen through the ranks, that is, having worked his way up in business?	Yes	U	No
212. Do you think that the kind of person who would "turn the other cheek" deserves to be slapped?	Yes	U	No

- | | | | |
|--|-----|---|----|
| 213. Have you ever had fears about other people that you later found to be without foundation? | Yes | U | No |
| 214. Do you think that large business corporations should be prohibited? | Yes | U | No |
| 215. Do you think that other people often try to take the credit for things you yourself have accomplished? | Yes | U | No |
| 216. At a movie or a play do you often feel that one of the main characters is a bit like you? | Yes | U | No |
| 217. Do you usually feel that in group undertakings your own plans are best? | Yes | U | No |
| 218. Do you think that in most places the traffic regulations are seriously in need of improvement? | Yes | U | No |
| 219. Is money necessary for complete happiness? | Yes | U | No |
| 220. Do many men deserve higher pay than their bosses? | Yes | U | No |
| 221. Have you ever been severely punished for something you didn't do? | Yes | U | No |
| 222. Does your conversation tend to center around your own interests and hobbies rather than those of other people? | Yes | U | No |
| 223. Do you frequently unburden your troubles to others? | Yes | U | No |
| 224. Do you know of any people at present who are intentionally trying to avoid you? | Yes | U | No |
| 225. Do some people become so rude that you feel the urge to "sit on them" or to "tell them off"? | Yes | U | No |
| 226. Do people sometimes offend you without knowing it because you hide your feelings from them? | Yes | U | No |
| 227. Have you ever felt that someone was hypnotizing you or forcing you to do things you did not want to do? | Yes | U | No |
| 228. When you enter a new group (business or social) do you like to be tipped off as to who are the important people to line up with? | Yes | U | No |
| 229. Do you enjoy taking part in a good fight? | Yes | U | No |
| 230. Do you believe that most people will tell a lie now and then in order to get ahead? | Yes | U | No |
| 231. Do you believe that only people with money can be sure of getting a square deal in courts of law? | Yes | U | No |
| 232. Are there some things about yourself concerning which you are rather touchy? | Yes | U | No |
| 233. On the whole, are your own ideas of how things should be done superior to the plans suggested by others? | Yes | U | No |
| 234. Do you think that an unusually bright person is likely to be physically weak? | Yes | U | No |
| 235. Were you ever ignored or given a "raw deal" through spite? | Yes | U | No |
| 236. Do most groups of people behave like a bunch of sheep; that is, blindly follow a leader? | Yes | U | No |
| 237. Do you suspect that most people who do you a good turn are really expecting something in return for it? | Yes | U | No |
| 238. Do you often feel that a lecturer is talking about you personally? | Yes | U | No |
| 239. Do you believe that most people shirk their duties whenever they can without appearing to do so? | Yes | U | No |
| 240. Does it seem to you that other people generally "have all the luck"? | Yes | U | No |
| 241. Does it distress you considerably to see another person in pain? | Yes | U | No |
| 242. Do you feel that many young people get ahead today because they have pull? | Yes | U | No |
| 243. Are most people thoughtless of the rights of others? | Yes | U | No |
| 244. Are you continually comparing yourself with other people? | Yes | U | No |
| 245. Do you find that generally if you want a thing done right you must do it yourself? | Yes | U | No |
| 246. Can a person get ahead by his own efforts if he does not look out for himself at every turn? | Yes | U | No |
| 247. Do you think your generation has as many opportunities for success as your parents' generation had? | Yes | U | No |
| 248. When things become dull do you feel the urge to stir up some excitement? | Yes | U | No |
| 249. Do you think the educational system in this country is seriously wrong in many respects? | Yes | U | No |
| 250. Do you usually receive criticism of yourself without resenting it? | Yes | U | No |
| 251. Is there anyone you know personally whom you would like to see behind prison bars? | Yes | U | No |
| 252. Are there important changes you would make immediately in your manner of living if you could have a substantial increase in income? | Yes | U | No |

253. Do you think that most people are overpaid for what they really contribute to society?	Yes	U	No
254. In most situations is it all right to conceal the truth when by doing so you give aid to a friend?	Yes	U	No
255. Do people frequently talk about you behind your back?	Yes	U	No
256. Is it almost unbearable for you to see a close friend or relative suffering intense pain?	Yes	U	No
257. Is it true that people will generally have contempt for a person who does not assert himself once in a while?	Yes	U	No
258. Can most people be trusted completely?	Yes	U	No
259. Do you believe that all public office holders sooner or later look out for their own interests first?	Yes	U	No
260. Should the government take over more and more the management of private business?	Yes	U	No
261. Are your feelings rather easily hurt?	Yes	U	No
262. Generally speaking, do you believe that people use a veneer of politeness to cover up what is usually "cutthroat" competition?	Yes	U	No
263. Are there many kinds of work that you would not consider doing because they are beneath you?	Yes	U	No
264. Do you think that a lot of people exaggerate their hard luck in order to gain sympathy from others?	Yes	U	No
265. Have you often felt that certain persons are secretly trying to get the better of you?	Yes	U	No
266. Have you frequently wished for enough money or power to impress people who regard you as an inferior?	Yes	U	No
267. Have you frequently become involved in conflicts in defense of your friends or members of your family?	Yes	U	No
268. Do many people think you are "hard-boiled"?	Yes	U	No
269. Does everything that happens seem to have a relationship to your own life or experience?	Yes	U	No
270. Do some people become so bossy or domineering that you want to do the opposite of everything they tell you to do?	Yes	U	No
271. Do other people often deliberately make things hard for you?	Yes	U	No
272. Are there times when it seems that everyone is against you?	Yes	U	No
273. When criminals make a daring escape from prison do you secretly hope that they will avoid capture?	Yes	U	No
274. Do you sometimes feel contempt for the opinions of others?	Yes	U	No
275. Does it bother you to have other people tell you what you should do?	Yes	U	No
276. Do you often feel that you are left out of things, perhaps unintentionally, in group activities?	Yes	U	No
277. Does the United States Government owe every one of its citizens a decent living?	Yes	U	No
278. Is the person who carelessly leaves valuable property lying around as much to blame as the person who appropriates it for his own use?	Yes	U	No
279. Will most people in business bear close watching when you are dealing with them?	Yes	U	No
280. Are you deserving of things far better than is your present lot?	Yes	U	No
281. Do you think no one would keep to the "straight and narrow path" were it not for the fear of being caught?	Yes	U	No
282. When you lose something do you often begin to suspect someone of either having taken it or having misplaced it?	Yes	U	No
283. Do you think that most people who allow themselves to come under the rule of a dictator are to blame for their plight?	Yes	U	No
284. Is there any subject on which you would like to hold a public indignation meeting for the purpose of organizing a mass protest?	Yes	U	No
285. Do you tend to let people run over you more than you should for your own good?	Yes	U	No
286. Have you frequently felt like telling "nosey" people to mind their own business?	Yes	U	No
287. Have you often found it necessary to stand up for what you believe to be right?	Yes	U	No
288. Do you usually seek to become an officer in any organization to which you belong?	Yes	U	No

289. Were you ever so deeply in debt that you did not know where the money was coming from to pay what you owed?	Yes	U	No
290. In group undertakings do you usually manage to have your own plans put into effect?	Yes	U	No
291. Have other people been too ready to accept credit which rightfully belongs to you?	Yes	U	No
292. Have you had more than your share of hard luck?	Yes	U	No
293. Do you believe that most people require someone to tell them what to do?	Yes	U	No
294. Are people in general out to get more than they give?	Yes	U	No
295. Do you often find it necessary to return merchandise to a store because it turns out to be not as represented?	Yes	U	No
296. If someone rudely crowds ahead of you in line, do you tell him where he belongs?	Yes	U	No
297. Do you feel that people almost always treat you right?	Yes	U	No
298. When climbing stairs do you often take the steps two at a time?	Yes	U	No
299. Do you frequently feel thwarted because you cannot do as you want to?	Yes	U	No
300. Do you believe you have been bossed too much for your own good?	Yes	U	No
301. Are you inclined to be quick in your actions?	Yes	U	No
302. Do you often find that you can think of smart things to say only after it is too late?	Yes	U	No
303. Do you feel bored much of the time?	Yes	U	No
304. Are you inclined to be slow and deliberate in movement?	Yes	U	No
305. Have you ever, on your own initiative, organized a club or group of any kind?	Yes	U	No
306. When you are walking with others, do they often have difficulty in keeping up with you?	Yes	U	No
307. Are you the kind of person who is "on the go" all the time he is awake?	Yes	U	No
308. Is your health generally better than that of most people?	Yes	U	No
309. Do you sometimes wish you were in another office (or school or factory) where your companions were more congenial?	Yes	U	No
310. Are you very good at making money as compared with others of your own age and sex?	Yes	U	No
311. Do you frequently feel self-conscious in the presence of important people?	Yes	U	No
312. Are you inclined to keep quiet when out in a social group?	Yes	U	No
313. Can you turn out a large amount of work in a short time?	Yes	U	No
314. Do you ever wish you could have been born at a different time or place or in a different family than you were?	Yes	U	No
315. Would you rate yourself as an impulsive individual?	Yes	U	No
316. Have there been many people with whom you have come in contact who did not care to associate with you?	Yes	U	No
317. Do you tend to prefer quiet rather than exciting amusements?	Yes	U	No
318. Do you ever wish that you were taller or shorter than you are?	Yes	U	No
319. Have you ever been regarded as a dare-devil?	Yes	U	No
320. Are you frequently absent-minded?	Yes	U	No
321. Are you inclined to rush from one activity to another without pausing for rest?	Yes	U	No
322. Are you usually confident of your abilities?	Yes	U	No
323. When you were a child were you usually made the "goat" by your playmates (such as being forced to be on the unpopular side while playing games)?	Yes	U	No
324. Do you generally prefer to take the lead in group activities?	Yes	U	No
325. Do you often wish your appearance were different than it is?	Yes	U	No
326. Are you often so much "on the go" that sooner or later you wear yourself out?	Yes	U	No
327. Do you often feel bubbling over with excess energy?	Yes	U	No
328. Do you often find that you cannot make up your mind until the time for action is past?	Yes	U	No

(Continue to next division.)

ATTITUDES*

DIRECTIONS: This section is designed to sample opinions about teacher-pupil relations. There is considerable disagreement as to what these relations should be; therefore, there are no right or wrong answers. What is wanted is your own individual feeling about the statements. Read each statement and decide how YOU feel about it. Then mark your answer in the space provided on the answer sheet.

If you strongly agree, blacken space under "1"

If you agree, blacken space under "2"

If you are undecided, or uncertain, blacken space under "3"

If you disagree, blacken space under "4"

If you strongly disagree, blacken space under "5"

Think in terms of the general situation rather than specific ones. There is no time limit, but work as rapidly as you can. Please respond to every item.

- | | |
|--|---|
| 329. Pupils who "act smart" probably have too high an opinion of themselves. | 342. The boastful child is usually over-confident of his ability. |
| 330. Minor disciplinary situations should sometimes be turned into jokes. | 343. Children have a natural tendency to be unruly. |
| 331. Shyness is preferable to boldness. | 344. A teacher cannot place much faith in the statements of pupils. |
| 332. Most pupils don't appreciate what a teacher does for them. | 345. Some children ask too many questions. |
| 333. If the teacher laughs with the pupils in amusing classroom situations, the class tends to get out of control. | 346. Discipline in the modern school is not as strict as it should be. |
| 334. It sometimes does a child good to be criticized in the presence of other pupils. | 347. Most pupils lack productive imagination. |
| 335. Unquestioning obedience in a child is not desirable. | 348. The majority of children take their responsibilities seriously. |
| 336. Young people are difficult to understand these days. | 349. Every pupil in the sixth grade should have sixth grade reading ability. |
| 337. There are times when a teacher cannot be blamed for losing patience with a pupil. | 350. A good motivating device is the critical comparison of a pupil's work with that of other pupils. |
| 338. A teacher should never discuss sex problems with the pupils. | 351. It is better for a child to be bashful than to be "boy or girl crazy." |
| 339. Pupils have it too easy in the modern school. | 352. The child must learn that "teacher knows best." |
| 340. Children's wants are just as important as those of an adult. | 353. Increased freedom in the classroom creates confusion. |
| 341. The teacher is usually to blame when pupils fail to follow directions. | 354. A teacher should not be expected to be sympathetic toward truants. |

* Individual items from the Minnesota Teacher Attitude Inventory by Walter W. Cook, Carroll H. Leeds, and Robert Callis, published by the Psychological Corporation. Reproduced with permission of publisher and authors.

355. Teachers should exercise more authority over their pupils than they do.
356. Discipline problems are the teachers greatest worry.
357. There is too much emphasis on grading.
358. Aggressive children are the greatest problem.
359. Many teachers are not severe enough in their dealings with pupils.
360. It is easier to correct disciplinary problems than it is to prevent them.
361. Children are usually too sociable in the class room.
362. Most pupils are resourceful when left on their own.
363. Too much nonsense goes on in many classrooms these days.
364. The school is often to blame in cases of truancy.
365. Children of today are worse than those of the past generation.
366. Most children would like to use good English.
367. Dishonesty as found in cheating is probably one of the most serious of moral offenses.
368. Pupils must learn to respect teachers if for no other reason than that they are teachers.
369. Children need not always understand the reasons for social conduct.
370. There is too much leniency today in the handling of children.
371. Difficult disciplinary problems are seldom the fault of the teacher.
372. The whims and impulsive desires of children are usually worthy of attention.
373. Children usually have a hard time following directions.
374. All children should start to read by the age of seven.
375. Universal promotion of pupils lowers achievement standards.
376. Children are unable to reason adequately.
377. Throwing of chalk and erasers should always demand severe punishment.
378. Most pupils try to make things easier for the teacher.
379. Too many activities lacking in academic respectability are being introduced into the curriculum of the modern school.
380. Children should be given more freedom in the classroom than they usually get.
381. Most pupils are unnecessarily thoughtless relative to the teacher's wishes.
382. Pupils are usually slow to "catch on" to new material.
383. Pupils can be very boring at times.
384. Children must be told exactly what to do and how to do it.
385. Most pupils are considerate of their teacher.
386. Whispering should not be tolerated.
387. A teacher should not be expected to do more work than he is paid for.
388. There is nothing that can be more irritating than some pupils.
389. "Lack of application" is probably one of the most frequent causes for failure.
390. Young people nowadays are too frivolous.
391. As a rule teachers are too lenient with their pupils.
392. Pupils like to annoy the teacher.
393. Children usually will not think for themselves.
394. Classroom rules and regulations must be considered inviolable.
395. Most pupils have too easy a time of it and do not learn to do real work.

396. Children are so likeable that their shortcomings can usually be overlooked.
397. It is difficult to understand why some children want to come to school so early in the morning before opening time.
398. Children are not mature enough to make their own decisions.
399. A child who bites his nails needs to be shamed.
400. There is no excuse for the extreme sensitivity of some children.
401. Most pupils are not interested in learning.
402. Young people today are just as serious minded as those of the past generation.
403. A pupil should always be fully aware of what is expected of him.
404. The child who stutters should be given the opportunity to recite oftener.
405. The teacher should disregard the complaints of the child who constantly talks about imaginary illnesses.
406. Children act more civilized than do many adults
407. Aggressive children require the most attention.
408. Keeping discipline is not the problem many teachers claim it to be.
409. Most pupil misbehavior is done to annoy the teacher.

(Continue to next division.)

BACKGROUND AND TRAINING

This section is designed to secure some information about your background and high school and college training and experience.

Read each question and select the answer that is correct for you and mark it on the answer sheet.

410. How many brothers and sisters do you have? (Count yourself and include deceased and half brothers and sisters.)
(1) One (2) Two or three (3) Four to six (4) Seven or over
411. Up to the time of your senior year in college, what size farm had you spent most time on?
(1) Less than 3 acres (3) 50 to 199 acres (5) Didn't live on a farm
(2) 3 to 49 acres (4) 200 or more acres

Some of the following questions concern parents. If one of your parents is dead but you can remember him or her well, answer as you remember; if not, answer for the people you have lived with most of the time between the time you were 12 to 20 years old.

412. Have your parents ever taken an active part in a farm organization (that is, in one which meets regularly)?
(1) Yes (2) No
413. Has either parent ever been a member of a school board?
(1) Yes (2) No
414. When you were in college (or at present, if you are in college now), how many, if any, offices did your father hold in organizations (include all organizations which have a membership list and hold regular meetings)?
(1) None (2) One (3) Two (4) Three or more
415. When you were in college (or at present, if you are in college now), how many, if any, offices did your mother hold in organizations (include all organizations which have a membership list and hold regular meetings)?
(1) None (2) One (3) Two (4) Three or more

416. How often did your mother attend church (when you were in college)?
(1) Less than once a month (3) Two or three times a month
(2) About once a month (4) Every Sunday if possible
417. How often did your father attend church (when you were in college)?
(1) Less than once a month (3) Two or three times a month
(2) About once a month (4) Every Sunday if possible
418. At the time you were a senior in college, would you estimate your parents' income to be in the upper, middle, or lower third in their community?
(1) Upper (2) Middle (3) Lower
419. How many times a month did you attend church when you were in college?
(1) Less than one (3) Two or three
(2) About one (4) Four, if possible
420. If you have been a member of a 4-H Club, did you ever represent your county or state in a contest?
(1) Yes (2) No
421. When did you learn to dance?
(1) In grade school (3) In college or after
(2) In high school (4) Not yet
422. In high school, in how many organized extra-curricular activities did you take an active part (football, baseball, basketball, track, dramatics, school paper, debate team, school dance, etc.)?
(1) None (2) One or two (3) Three to five (4) Six or more
423. Were you an officer in any organization in high school?
(1) No (2) One or two (3) Three or four (4) Five or more
424. In college, did you take any part in organized sports?
(1) Yes (2) No
425. If "Yes" to 424, on how many teams (different sports) did you represent your college or organization?
(1) One (2) Two (3) Three or more (4) Tried but didn't make a team
426. Were you an officer in any college organization?
(1) No (2) One (3) Two or three (4) Four or more
427. Did you have a hobby in college that occupied as much as three hours a week? (A creative activity not primarily concerned with economic return.)
(1) Yes (2) No
428. On the average, how many dates each month did you have while you were in college?
(1) None to one (3) Four to six (5) Was married, so doesn't apply
(2) Two to three (4) Six or more
429. How did you feel during your college dating?
(1) Largely indiferent (3) Comfortable with some, uncomfortable with others
(2) Shy of the other sex (4) Completely at ease with all "dates"
430. What per cent of your college expenses did you earn (include G.I. benefits in the proportion you earned)?
(1) None (2) 1 to 25% (3) 26 to 50% (4) 51 to 99% (5) 100%
431. When you were in college, did you consider your health to be:
(1) Poor (2) Fair (3) Good (4) Excellent

432. How many semester hours do you have in Sociology and Psychology combined?

- | | |
|-------------------|----------------------|
| (1) None to three | (3) Seven to twelve |
| (2) Four to six | (4) Thirteen or more |

433. Have you had a course in Journalism?

- | | |
|---------|--------|
| (1) Yes | (2) No |
|---------|--------|

434. How many hours do you have in Agricultural Education?

- | | |
|----------------|-------------------|
| (1) None | (3) Six to twelve |
| (2) One to six | (4) Over twelve |

Below are several debatable statements concerning farming. In any farm group there would be differences of opinions. Indicate how you feel about each.

435. Amount of income is the most important single consideration when looking for a job today.

- | | | |
|-----------|---------------|--------------|
| (1) Agree | (2) Undecided | (3) Disagree |
|-----------|---------------|--------------|

436. A person should never make a suggestion about a neighbor's farming problems unless it is requested.

- | | | |
|-----------|---------------|--------------|
| (1) Agree | (2) Undecided | (3) Disagree |
|-----------|---------------|--------------|

437. Only occasionally does a man who has not grown up on a farm become a successful farmer.

- | | | |
|-----------|---------------|--------------|
| (1) Agree | (2) Undecided | (3) Disagree |
|-----------|---------------|--------------|

438. Some kind of a farm program is justified because farmers produce in a world of strong labor and business combinations.

- | | | |
|-----------|---------------|--------------|
| (1) Agree | (2) Undecided | (3) Disagree |
|-----------|---------------|--------------|

439. When a man's work is pressing him, he should work after his usual quitting time, and on Sunday.

- | | | | |
|------------|---------------|------------|-----------|
| (1) Always | (2) Sometimes | (3) Seldom | (4) Never |
|------------|---------------|------------|-----------|

440. When a man has planned a trip with his family, he should let last minute jobs interfere.

- | | | | |
|-----------|---------------|-------------|-------------------|
| (1) Never | (2) Sometimes | (3) Usually | (4) Almost always |
|-----------|---------------|-------------|-------------------|

441. When quitting time comes, a man should put his job aside until the next day.

- | | | |
|-----------|---------------|--------------|
| (1) Agree | (2) Undecided | (3) Disagree |
|-----------|---------------|--------------|

442. A higher cash income is the chief need of farmers today.

- | | | |
|-----------|---------------|--------------|
| (1) Agree | (2) Undecided | (3) Disagree |
|-----------|---------------|--------------|

443. If the house needs indoor plumbing and the barn a milking machine, the milking machine should be purchased first.

- | | | | |
|------------|-------------|---------------|-----------|
| (1) Always | (2) Usually | (3) Sometimes | (4) Never |
|------------|-------------|---------------|-----------|

444. The fewer people we have working for any agency of the federal government, the better off we'll be.

- | | | |
|-----------|---------------|--------------|
| (1) Agree | (2) Undecided | (3) Disagree |
|-----------|---------------|--------------|

445. By making full use of available scientific information, on the average, farmers could double their net income.

- | | | |
|-----------|---------------|--------------|
| (1) Agree | (2) Undecided | (3) Disagree |
|-----------|---------------|--------------|

446. The most important job of politicians should be to keep taxes low.

- | | | |
|-----------|---------------|--------------|
| (1) Agree | (2) Undecided | (3) Disagree |
|-----------|---------------|--------------|

447. Most farmers pay little attention to the information on scientific farming disseminated by the College of Agriculture.

- | | | |
|-----------|---------------|--------------|
| (1) Agree | (2) Undecided | (3) Disagree |
|-----------|---------------|--------------|

448. Farm homes are more pleasant than those of other families.
(1) Agree (2) Undecided (3) Disagree
449. It is less fun living on a farm than in a town (population 500 to 5,000).
(1) Agree (2) Undecided (3) Disagree
450. Farming involves more distasteful tasks than do most occupations.
(1) Agree (2) Undecided (3) Disagree
451. In my opinion, farming is the most healthful of all occupations.
(1) Agree (2) Undecided (3) Disagree
452. On the whole, in my opinion, a farm is the best possible place to rear children.
(1) Agree (2) Undecided (3) Disagree

STUDENTS STOP HERE

453. How many years have you worked for the Agricultural Extension Service?
(1) 3 or less (3) 7 to 10 (5) 20 or more
(2) 4 to 6 (4) 11 to 19
454. Your age when first employed by the Agricultural Extension Service:
(1) Under 22 (3) 26 to 30
(2) 22 to 25 (4) 31 or over
455. What has been the average number of years per county you have worked for Extension?
(Do not count your training period, if any.)
(1) 1 to 3 (3) 9 to 12 (5) Worked in one county only
(2) 4 to 8 (4) 13 to 20
456. Do you, at present, own or manage a farm?
(1) Yes (2) No
457. In the first county you served, did you get the impression that the people's attitude toward Extension was on the whole:
(1) Very much interested (3) Generally uninterested
(2) Fairly interested (4) Somewhat antagonistic
458. In the first county, when did you first feel a part of the community?
(1) Immediately (3) After quite a while
(2) Quite soon (4) Never did
459. In the county you trained in, how satisfactory was the relationship of the Extension staff to the sponsoring agency?
(1) Perfectly satisfactory (3) Fairly satisfactory
(2) Quite satisfactory (4) Unsatisfactory

Indicate whether you feel that you emphasize the teaching techniques listed below more, about the same, or less than most of the agents whose programs you know something about.

460. Result demonstrations:
(1) Emphasize more (2) About the same (3) Less
461. Newspaper articles:
(1) Emphasize more (2) About the same (3) Less

AGENTS STOP HERE

462. Grade point average (Highest possible grade equals 4.0):

- | | |
|------------------|------------------|
| (1) Under 2.00 | (4) 2.50 to 3.00 |
| (2) 2.00 to 2.25 | (5) 3.00 or over |
| (3) 2.25 to 2.50 | |

463. Is the grade point average for the last semester higher than the cumulative average?

- | | |
|-----------------------------------|-------------------------------------|
| (1) No, it's lower | (3) Yes, between 0.5 and 1.0 higher |
| (2) Yes, but less than 0.5 higher | (4) Yes, more than 1.0 higher |

COPY

APPENDIX C

United States Department of Agriculture
Federal Extension Service
Washington 25, D.C. 20250

Cooperating with Land Grant
Colleges and Universities

February 24, 1964

Dr. Wilber E. Ringler
Assistant Director
Extension Service
Kansas State University
Manhattan, Kansas 66504

Dear Wilber:

The scores on the Missouri County Agent Inventory did not turn out to be a good aptitude predictor for county agricultural agents in Kansas as shown by the charts you sent me. The correlation between the performance evaluation of the agents and the short form score of the Missouri Inventory was .04. The correlation with the long form score was .13.

Hence I made an item analysis of each of the 461 questions in the Missouri Inventory on the basis of the 52 Kansas agents. One hundred and seventeen questions were found to differentiate between the top rated third and the bottom rated third of the Kansas agents. The questions differentiated at the one or five percent level of statistical significance. I was surprised to find so many questions which did so on only 52 agents.

So I rescored the inventories for the 52 agents, using a new key based on the 117 questions for Kansas and compared these new scores with the performance evaluation of the agents. The correlation was .87, very high.

Attached is the chart showing this relationship with the names of the agents in each category. Of the 17 agents rating in the top third, 15 were also in the top third of the new Kansas Inventory Score; only two in the middle third of the Inventory Score and none in the lower third. Those who were high on the New Inventory were high on the ratings.

Not that the following is good administrative policy, but as an example of the accuracy of the prediction of these 117 questions, if you had not hired the applicants who scored in the lower third (17 agents) on the New Inventory Score, you would have lost 15 agents in the lower rated third; only two in the middle third and none in the upper rated third. The selectivity was very accurate.

-2-

If a relationship like this should continue to hold year after year, you would have a wonderful aptitude test for selecting county agricultural agents. It could serve as a fifth basis, in addition to the application form, college grade point average, personal references and personal interviews in selecting agents.

The results suggest the use of the 117 questions plus some others as a refined aptitude test for Kansas and given to new agents as they are hired and then tested further as was done with the Missouri County Agent Inventory. The new test will be much shorter and feasible to administer than the 461 questions in the Missouri County Agent Inventory.

If you folks plan to go ahead with this I would like to talk with you further about a number of detailed suggestions in the use of the 117 questions and some other questions.

I expect to attend the training conference in Lincoln, March 30-April 2 and could come to Kansas following the conference, say Friday, April 3, or Monday, April 6. Could you let me know as soon as convenient so that I can schedule some other States on the way home?

I am very happy to see this turn out so well. Enclosed is also a list of 52 agents and their scores on the New Kansas Inventory of 117 questions and a scoring key for the 117 questions. I also have some interesting correlation data to discuss with you.

Sincerely yours,

(Signed) Fred P. Frutchey

Fred P. Frutchey
Extension Research Specialist,
Teaching Methods
Division of Extension Research
and Training

Enclosures

APPENDIX D

Kansas - Relationship Between New Inventory Scores and Ratings

	Low Third on Rating (18)	Middle Third on Rating (17)	High Third on Rating (17)
High Third on New Inventory Score (15)			X1 X 9 X2 X10 X3 X11 X4 X12 X5 X13 X6 X14 X7 X15 X8 (15)
Middle Third on New Inventory Score (20)	X35 X36 X37 (3)	X18 X26 X19 X27 X20 X28 X21 X29 X22 X30 X23 X31 X24 X32 X25 (15)	X16 X17 (2)
Low Third on New Inventory Score (17)	X38 X46 X39 X47 X40 X48 X41 X49 X42 X50 X43 X51 X44 X52 X45 (15)	X33 X34 (2)	

Note: "X" represents the names of agents.

APPENDIX E

**A N
I N D I V I D U A L
I N V E N T O R Y**

Section I -- Listed below are selected occupations, school subjects, activities, and a description of various kinds of people. You are to indicate your interest in each item listed by circling the appropriate letter.

Circle the L if you like that item.

Circle the I if you are indifferent to it.

Circle the D if you dislike the item.

Work rapidly. Your first impressions are desired. Answer all items.

- | | | | |
|---------------------------|-------|-------------------------------|-------|
| 1. Actor (not movie) | L I D | 24. Observing birds | L I D |
| 2. Architect | L I D | (nature study) | |
| 3. Army Officer | L I D | 25. Vaudeville | L I D |
| 4. Author of Novel | L I D | 26. Pet canaries | L I D |
| 5. Aviator | L I D | 27. Pet monkeys | L I D |
| 6. Bank Teller | L I D | 28. Taking responsibility | L I D |
| 7. Building Contractor | L I D | 29. Pursuing bandits in | |
| 8. Dentist | L I D | sheriff's posse | L I D |
| 9. Explorer | L I D | 30. Writing personal letters | L I D |
| 10. Factory Manager | L I D | 31. Looking at shop windows | L I D |
| 11. Florist | L I D | 32. Continually changing | |
| 12. Interpreter | L I D | activities | L I D |
| 13. Lawyer, Criminal | L I D | 33. Developing business | |
| 14. Marine Engineer | L I D | systems | L I D |
| 15. Mining Superintendent | L I D | 34. Looking at a collection | |
| 16. Photo Engraver | L I D | of antique furniture | L I D |
| 17. Railway Conductor | L I D | 35. Optimists | L I D |
| 18. Ship Officer | L I D | 36. Pessimists | L I D |
| 19. Traveling Salesman | L I D | 37. People who have made | |
| 20. Botany | L I D | fortunes in business | L I D |
| 21. Physiology | L I D | 38. Emotional people | L I D |
| 22. Public Speaking | L I D | 39. Spendthrifts | L I D |
| 23. Sociology | L I D | 40. Talkative people | L I D |
| | | 41. Carelessly dressed people | L I D |

Section II -- **ORDER OF PREFERENCE OF ACTIVITIES.** Indicate which two of the following seven activities you would enjoy most by marking under number "1"; also indicate which two you would enjoy least by marking them under number "3". Mark the remaining three activities under number "2".

- | | 1 | 2 | 3 | |
|-----------------|---|---|---|--|
| 42. () () () | | | | Develop the theory of operation of a new machine, e.g., auto |
| 43. () () () | | | | Operate (manipulate) the new machine |
| 44. () () () | | | | Determine the cost of operation of the machine |
| 45. () () () | | | | Supervise the manufacture of the machine |
| 46. () () () | | | | Create a new artistic effect, i.e., improve the beauty of the auto |
| 47. () () () | | | | Teach others the use of the machine |
| 48. () () () | | | | Interest the public in the machine through public addresses |

Indicate in the same way the two positions you would most prefer to hold in club or society; also the two you least prefer to hold. Mark the remaining one in column 2.

- | | 1 | 2 | 3 | |
|-----------------|---|---|---|-----------------------------------|
| 49. () () () | | | | President of a Society or Club |
| 50. () () () | | | | Treasurer of a Society or Club |
| 51. () () () | | | | Chairman, Entertainment Committee |
| 52. () () () | | | | Chairman, Membership Committee |
| 53. () () () | | | | Chairman, Program Committee |

Section III -- COMPARISON OF INTEREST BETWEEN TWO ITEMS. Indicate your choice of the following pairs by placing an "x" in the first space on the answer sheet if you prefer the item to the Left, and "x" in the second space if you like them equally well, and in the third space if you prefer the item to the Right. Assume other things are equal expect the two items to be compared.

- | | L | E | R | |
|--|-----|-----|-----|---------------------------------|
| 54. House to house canvassing | () | () | () | Retail selling |
| 55. Work in a large corporation with little chance of becoming president until age of 55 | () | () | () | Work for self in small business |
| 56. Present a report in writing | () | () | () | Present a report verbally |
| 57. Playing baseball | () | () | () | Watching baseball |

Section IV -- RATING OF PRESENT ABILITIES AND CHARACTERISTICS. Indicate in appropriate space below each item your answer to the statement listed.

- | | Yes | ? | No |
|--|-----|-----|-----|
| 58. Usually start activities of my group | () | () | () |
| 59. Usually drive myself steadily (do not work by fits and starts) | () | () | () |
| 60. Usually get other people to do what I want done | () | () | () |
| 61. Am quite sure of myself | () | () | () |
| 62. Put drive into the organization | () | () | () |
| 63. Win confidence and loyalty | () | () | () |
| 64. Smooth out tangles and disagreements between people | () | () | () |
| 65. Discuss my ideals with others | () | () | () |

BE SURE YOU HAVE NOT OMITTED ANY PART.

INDIVIDUAL CHARACTERISTICS

Below questions to be marked "yes", "U", or "No". Read each question in turn, think what your opinion on your behavior has usually been and check the answer that best describes your response to the item. Mark "U" only when you are unable to decide between "Yes" and "No". There are no right answers to these questions except the answers that tell how you think or feel about them. Work rapidly; your first impression of the general situation is the desired answer.

- | | |
|---|----------|
| 66. When you are criticized does it disturb you badly? | Yes U No |
| 67. Generally speaking, do you think the head of a firm should have risen through the ranks, that is, having worked his way up in business? | Yes U No |
| 68. Do many men deserve higher pay than their bosses? | Yes U No |
| 69. Have you ever been severely punished for something you didn't do? | Yes U No |
| 70. Do you think that an unusually bright person is likely to be physically weak? | Yes U No |
| 71. Are you continually comparing yourself with other people? | Yes U No |
| 72. Do you find that generally if you want a thing done right you must do it yourself? | Yes U No |
| 73. Do you think the educational system in this country is seriously wrong in many respects? | Yes U No |
| 74. Have you frequently wished for enough money or power to impress people who regard you as an inferior? | Yes U No |
| 75. Are there times when it seems that everyone is against you? | Yes U No |

- | | |
|--|----------|
| 76. Do you sometimes feel contempt for the opinions of others? | Yes U No |
| 77. Is the person who carelessly leaves valuable property lying around as much to blame as the person who appropriates it for his own use? | Yes U No |
| 78. Do you think no one would keep to the "straight and narrow path" were it not for the fear of being caught? | Yes U No |
| 79. When you lose something do you often begin to suspect someone of either having taken it or having misplaced it? | Yes U No |
| 80. Is there any subject on which you would like to hold a public indignation meeting for the purpose of organizing a mass protest? | Yes U No |
| 81. Do you tend to let people run over you more than you should for your own good? | Yes U No |
| 82. Have you had more than your share of hard luck? | Yes U No |
| 83. Do you sometimes wish you were in another office (or school or factory) where your companions were more congenial? | Yes U No |
| 84. Do you tend to prefer quiet rather than exciting amusements? | Yes U No |
| 85. Are you often so much "on the go" that sooner or later you wear yourself out? | Yes U No |

ATTITUDES

This section is designed to sample opinion about teacher-pupil relations. There is considerable disagreement as to what these relations should be; therefore, there are no right and wrong answers. What is wanted is your own individual feeling about the statements. Read each statement and decide how you feel about it. Then mark your answer in the space provided.

If you strongly agree, circle "1"
 If you agree, circle "2"
 If you are undecided, circle "3"
 If you disagree, circle "4"
 If you strongly disagree, circle "5"

- | | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 86. Shyness is preferable to boldness. | x | x | x | x | x |
| 87. If the teacher laughs with the pupils in amusing classroom situations, the class tends to get out of control. | x | x | x | x | x |
| 88. It sometimes does a child good to be criticized in the presence of other pupils. | x | x | x | x | x |
| 89. Unquestioning obedience in a child is not desirable. | x | x | x | x | x |
| 90. Pupils have it too easy in the modern school. | x | x | x | x | x |
| 91. Children's wants are just as important as those of an adult. | x | x | x | x | x |
| 92. The boastful child is usually over-confident of his ability. | x | x | x | x | x |
| 93. Discipline in the modern school is not as strict as it should be. | x | x | x | x | x |
| 94. Most pupils lack productive imagination. | x | x | x | x | x |
| 95. The majority of children take their responsibilities seriously. | x | x | x | x | x |
| 96. Every pupil in the sixth grade should have sixth grade reading ability. | x | x | x | x | x |
| 97. It is better for a child to be bashful than to be "boy or girl crazy." | x | x | x | x | x |

	1	2	3	4	5
98. The child must learn that "teacher knows best."	x	x	x	x	x
99. Increased freedom in the classroom creates confusion.	x	x	x	x	x
100. A teacher should not be expected to be sympathetic toward truants.	x	x	x	x	x
101. Teachers should exercise more authority over their pupils than they do.	x	x	x	x	x
102. Children are usually too sociable in the classroom.	x	x	x	x	x
103. Too much nonsense goes on in many classrooms these days.	x	x	x	x	x
104. The school is often to blame in cases of truancy.	x	x	x	x	x
105. Children of today are worse than those of the past generation.	x	x	x	x	x
106. Most children would like to use good English.	x	x	x	x	x
107. Dishonesty as found in cheating is probably one of the most serious of moral offenses.	x	x	x	x	x
108. Children need not always understand the reasons for social conduct.	x	x	x	x	x
109. The whims and impulsive desires of children are usually worthy of attention.	x	x	x	x	x
110. Universal promotion of pupils lowers achievement standards.	x	x	x	x	x
111. Throwing of chalk and erasers should always demand severe punishment.	x	x	x	x	x
112. Most pupils try to make things easier for the teacher.	x	x	x	x	x
113. Too many activities lacking in academic respectability are being introduced into the curriculum of the modern school.	x	x	x	x	x
114. Children should be given more freedom in the classroom than they usually get.	x	x	x	x	x
115. Pupils can be very boring at times.	x	x	x	x	x
116. Children must be told exactly what to do and how to do it.	x	x	x	x	x
117. A teacher should not be expected to do more work than he is paid for.	x	x	x	x	x
118. As a rule teachers are too lenient with their pupils.	x	x	x	x	x
119. Most pupils have too easy a time of it and do not learn to do real work.	x	x	x	x	x
120. Young people today are just as serious minded as those of the past generation.	x	x	x	x	x
121. The child who stutters should be given the opportunity to recite oftener.	x	x	x	x	x
122. Keeping discipline is not the problem many teachers claim it to be.	x	x	x	x	x

BACKGROUND AND TRAINING

This section is designed to secure some information about your background and high school training and experience. Read each question and select the answer that is correct for you and mark in appropriate space.

123. In college, did you take any part in organized sports?
 (1) Yes (2) No
124. If "Yes" to 123, on how many teams (different sports) did you represent your college or organization?
 (1) One (2) Two (3) Three or more (4) Tried but didn't make a team

125. Were you an officer in any college organization?
(1) No (2) One (3) Two or three (4) Four or more
126. On the average, how many dates each month did you have while you were in college?
(1) None to one (3) Four to six (5) Was married, so doesn't apply
(2) Two to three (4) Six or more
127. How did you feel during your college dating?
(1) Largely indifferent (3) Comfortable with some, uncomfortable with others
(2) Shy of the other sex (4) Completely at ease with all "dates"
128. How many semester hours do you have in Sociology and Psychology combined?
(1) None to three (3) Seven to twelve
(2) Four to six (4) Thirteen or more
129. How many hours do you have in Agricultural Education?
(1) None (3) Six to twelve
(2) One to six (4) Over twelve

Below are several debatable statements concerning farming. In any farm group there would be differences of opinions. Indicate how you feel about each.

130. If the house needs indoor plumbing and the barn a milking machine, the milking machine should be purchased first.
(1) Always (2) Usually (3) Sometimes (4) Never
131. The fewer people we have working for any agency of the federal government, the better off we'll be.
(1) Agree (2) Undecided (3) Disagree
132. On the whole, in my opinion, a farm is the best possible place to rear children.
(1) Agree (2) Undecided (3) Disagree

AN ANALYSIS OF FACTORS ASSOCIATED WITH THE EFFECTIVENESS
OF COUNTY EXTENSION AGENTS IN THE STATE OF KANSAS

by

NEJDET MUSTAFA

B. S., Kansas State University, 1964

AN ABSTRACT OF A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

School of Education

KANSAS STATE UNIVERSITY
Manhattan, Kansas

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Purpose and Procedure

The purpose of this study was to identify and explain some of the background characteristics, college education and other factors associated with the effectiveness of county Extension agents in Kansas.

The main objective was to determine if there were important associations between the county agent's effectiveness and, tenure in Extension, age, academic major field of study (Education and subject matter technical majors), previous job experiences, college undergraduate grade-point-average, and the subject matter credit hours earned in Education, Extension Education, Psychology, Sociology, Speech and Journalism, and Humanity courses.

Agent effectiveness was determined by a previous study conducted by W. E. Ringler, Assistant Director of the Kansas Extension Service, in cooperation with the Federal Extension Service. The population was the 30 county Extension agents who had a minimum service of twelve months between July 1, 1958 and June 30, 1963 in the Kansas Cooperative Extension Service. The data were assembled from records in the Kansas State Extension Office. The methods used in the analysis were: group comparisons by, arithmetic mean, statistical median and range; and Yule's "Q", to determine the degree and the direction of associations between attributes under study.

Summary of Associations

The coefficients of associations between the various background characteristics and effectiveness of agents were:

1. There was a perfect positive association between the effectiveness of agents and:

- (a) M.S. degree or agents desire toward an advanced degree.
- (b) Thirteen hours or more Education courses.

2. There was a high positive association between the effectiveness of agents and:

- (a) Previous job experience in teaching Vocational Agriculture, Extension Service and Sales work.
- (b) Agricultural Education, Vocational Education, and Extension Education majors.
- (c) Previous job experience in the U.S. Army and National Guard.
- (d) 4.1 hours or more (more than one) Sociology courses.
- (e) Education courses (one and more).
- (f) More than two (3-4) Speech and Journalism courses.

3. There was a moderate positive association between the effectiveness of agents and:

- (a) 5.9 hours or more (more than one) Psychology courses.
- (b) Forty-three months or more miscellaneous previous job experiences.
- (c) 25.9 years of age and over.
- (d) Extension Education courses (one and more).
- (e) 2.5 undergraduate grade-point-average and above.

4. There was a moderate negative association between the effectiveness of agents and:

(a) One course in the Humanities.

(b) One course in Sociology.

5. There was a low positive association between the effectiveness of agents and 5.8 hours or more (two or more) Speech and Journalism courses.

6. There was a very low positive association between the effectiveness of agents and:

(a) Technical (Agronomy, Dairy Husbandry, Animal Husbandry, and Horticulture) majors.

(b) 6.3 hours or more (more than two) Humanity courses.

(c) One course in Psychology.

7. There was a very low negative association between the effectiveness of agents and tenure on the job.

Recommendations

The study was not designed to make "inductive" use of results. However the researcher feels that administrators of the Kansas Extension Service, when selecting county agents, should consider the above associations between the effectiveness of agents and their various background factors. Consideration of these factors at the time of selecting agents may improve the Staffing Process of the Kansas Extension Service.